

I. GENERAL

This is the 43rd annual operating plan for the Fryingpan-Arkansas Project. The project, completed in 1990, imports spring snowmelt runoff from Colorado's west slope to the semi-arid Arkansas River Basin on Colorado's east slope. The project consists of federally owned dams, reservoirs, stream diversion structures, conduits, tunnels, pumping plants, a pumped-storage power plant, electric transmission lines, substations, and recreation facilities. These features are located in the Fryingpan River and Hunter Creek watersheds of the upper Colorado River Basin, and in the Arkansas River Basin in central and southeastern Colorado. The project provides water for irrigation, municipal and industrial use, hydroelectric power generation, recreation, and wildlife habitat. The project also provides for flood control.

The project was authorized under Public Law 87-590 on August 16, 1962. This law provides that the project will be operated under the operating principles adopted by the state of Colorado on April 30, 1959, as amended on December 30, 1959, and on December 9, 1960. These operating principles were published as House Document 130 (87th Congress, 1st Session), and are included in Appendix E.

This annual operating plan is a summary of the actual project operation in Water Year (WY) 2012 (October 1, 2011 through September 30, 2012).

II. PROJECT FEATURES IN OPERATION DURING WATER YEAR 2012

Ruedi Dam and Reservoir are located on the Fryingpan River, a tributary of the Roaring Fork River, on Colorado's west slope about 13 miles east of Basalt, Colorado. Ruedi Reservoir has a total capacity of 102,373 acre-feet at a water surface elevation of 7,766.0 feet. The reservoir is operated on an annual cycle. Steady winter releases draft the reservoir such that it is filled with the spring runoff, while releases to the Fryingpan River are maintained below the safe channel capacity. The reservoir provides replacement water for out-of-priority depletions to the Colorado River by the project as well as water for west slope irrigation, municipal, and industrial uses on a contractual basis. The reservoir is also operated to provide for recreation and wildlife habitat.

The west slope collection system, located upstream of Ruedi Reservoir in the upper Fryingpan River and Hunter Creek watersheds, is a series of 16 stream diversion structures and eight tunnels. The system collects spring snowmelt runoff for diversion, by gravity, to the inlet of the Charles H. Boustead Tunnel. The Boustead Tunnel conveys water collected by the west slope collection system under the continental divide and into Turquoise Lake on the east slope. The tunnel is 5 miles long and has a water conveyance capacity of 945 cubic feet per second (cfs). Sugarloaf Dam and Turquoise Lake are located on Lake Fork Creek, a tributary of the Arkansas River, about 5 miles west of Leadville, Colorado. The lake has a total capacity of 129,398 acre-feet at a water surface elevation of 9,869.4 feet. The lake is operated to provide regulation of both project and non-project water imported from the west slope. Turquoise Lake is operated on an annual cycle, as is Ruedi Reservoir. The lake is drafted through the Mt. Elbert Conduit during the winter to provide adequate space for the spring imports of west slope water. Most of the native inflow from Lake Fork Creek is impounded in the lake and returned to the Arkansas River via the Mt. Elbert Conduit, the Mt. Elbert Power Plant, and Twin Lakes. The lake is also operated to provide for recreation and wildlife habitat.

The Mt. Elbert Conduit conveys project, non-project, and native Lake Fork Creek water from Turquoise Lake to Twin Lakes. The conduit is 10.7 miles long and has a water conveyance capacity of 370 cfs. Native water from Halfmoon Creek is also added to the conduit and returned to the Arkansas River from Twin Lakes Dam. All conduit flow which reaches the Mt. Elbert Forebay is used to generate electricity at the Mt. Elbert Power Plant as it is delivered to Twin Lakes.

The Mt. Elbert Power Plant is a pumped-storage facility located on the shore of Twin Lakes. It has two 100-megawatt turbine generators, which can be reversed and used as 340,000-horsepower pumps. In addition to being used to generate energy with the Mt. Elbert Conduit flow, the plant is used to follow daily peak power loads. This load following is accomplished by pumping water to the Mt. Elbert Forebay, an 11,143-acre-foot regulating pool at the terminus of

the Mt. Elbert Conduit, from Twin Lakes during off-peak load hours using surplus or low cost energy. That water is then returned to Twin Lakes through the turbines during peak load hours, along with the Mt. Elbert Conduit flow. The energy generated at the plant is transmitted and marketed by the Western Area Power Administration, with the revenues applied to the repayment of the project.

Twin Lakes Dam and Twin Lakes are located on Lake Creek, a tributary of the Arkansas River, about 13 miles south of Leadville, Colorado. Twin Lakes has a capacity of 140,855 acre-feet at a maximum water surface elevation of 9,200 feet. The reservoir is operated to regulate both project and non-project water imported from the west slope. The project water stored in the reservoir is released to Lake Creek for storage in Pueblo Reservoir during the winter months, in anticipation of spring imports from the west slope. Native inflows into Turquoise Lake, native flows diverted from Halfmoon Creek, and native inflows into Twin Lakes, are all released to Lake Creek from the Twin Lakes Dam. The cities of Colorado Springs and Aurora take direct delivery of water from the reservoir through their Otero Pipeline. The operation of Twin Lakes also provides for recreation and wildlife habitat.

Pueblo Dam and Reservoir are located on the Arkansas River 6 miles west of the city of Pueblo, Colorado. The reservoir is the terminal storage facility for the Fryingpan-Arkansas Project and has a total storage capacity of 349,940 acre-feet at a water surface elevation of 4,898.7 feet. The upper 26,991 acre-feet of storage space are reserved for flood control at all times, and an additional 66,000 acre-feet of space are reserved from April 15 through November 1. Non-project water may be stored in the reservoir under temporary contract. Native inflow can be stored when the project storage right is in priority or under the winter water storage program (WWSP). Under the WWSP, irrigators are permitted to store native Arkansas River water in Pueblo Reservoir during the winter months for an additional supply of irrigation water, on the condition that the water is used before May 1 of the next water year. The majority of project water deliveries are made from the reservoir. The Fountain Valley Authority, the Pueblo West Metropolitan District, and the Pueblo Board of Water Works take direct delivery of municipal water through the south outlet works and joint-use manifold. A direct irrigation delivery is made to the Bessemer Ditch. Other project deliveries are made as releases to the Arkansas River for diversion downstream. Pueblo Reservoir is also operated to provide for recreation, wildlife habitat, and flood control.

III. HYDROLOGIC CONDITIONS AND WEATHER EVENTS IN WATER YEAR 2012

Precipitation over the Fryingpan watershed above Ruedi Reservoir was below average for most all months in WY 2012. October precipitation started out the year above average at 103 percent of average. However, by November precipitation began to wane and remained below average for the remainder of the winter and spring months. The watershed did not see a break in the dry pattern until July when the monsoon storms added some much needed precipitation to the basin. Snow pack was dismal for WY 2012 similar to precipitation in that it remained below average from November until May. Most of the SNOTEL sites used to forecast inflow to Ruedi, Fremont Pass, Ivanhoe, Nast Lake, and Kiln had melted out by May 1, 2012. These sites, on average, do not melt out until about June 1. By April 1, 2012, the average snow water equivalent for these sites was 36 percent of average which was significantly lower than the previous year.

Average daily temperatures at the SNOTEL sites in the basin above Ruedi were above average for all months of WY 2012. In addition, most of these sites monthly temperatures were several degrees above the average.

Inflows to Ruedi Reservoir started early reflecting the above average temperatures but by late spring were below average and remained that way for the year. The cumulative reservoir inflow for the months of October through March was 100 percent of average; however, inflow for the months of April through September was only 49 percent of average. Runoff reached a seasonal peak in early June of 302 cfs which was the second lowest peak for the period of record. The monsoonal storm pattern started early in WY 2012, and precipitation at the Mormon Control house site was above average for all the months of July, August, and September. Inflows reflected this increase in precipitation with the July through September cumulative inflow at 58 percent of average. The total inflow volume for the April through July period in WY 2012 was 43,125 acre-feet which is 47 percent of average and is the third lowest for the period of record.

IV. REPORT ON OPERATIONS DURING WATER YEAR 2012

A. Ruedi Reservoir

Ruedi Reservoir started out WY 2012 with a storage content of 88,507 acre-feet, which is 100 percent of average. Winter releases were set at 90 cfs and remained at that rate until April. Releases during the winter were made through the city of Aspen's hydroelectric powerplant.

By April 1, 2012, snow accumulation had peaked for most SNOTEL sites in the drainage area and the forecast for runoff over the April through July period indicated that Ruedi Reservoir would struggle filling. The runoff forecast for this period was 84,800 acre-feet or 62 percent of average. With such a dismal runoff forecast, releases were decreased from 90 cfs to the minimum of 39 cfs and held there for the month of April. With this decrease in release, the city of Aspen's hydroelectric powerplant could no longer generate and was taken offline, so releases from were made through the tandem outlet gates.

By early May, conditions had not improved and the forecast reflected this with a forecasted inflow volume of 55,000 acre-feet or 43 percent of average. On May 1, 2012, the releases from Ruedi were increased to 105 cfs to meet the required flow target of 110 cfs at the gage below the dam. Releases continued at this rate until the contract and fish releases were made in the middle of June.

Ruedi Reservoir is a participating reservoir in the Coordinated Reservoir Operations (CROS) effort of the Upper Colorado River Endangered Fish Recovery Program. Reservoir operations are directed at augmenting the peak flows in the 15-Mile reach of the Colorado River. Ruedi Reservoir did not participate in CROS operations this year, because the May 1 runoff forecast did not project the reservoir's physical filling.

Ruedi Reservoir reached a maximum content for the year of 90,248 acre-feet on June 21, 2012. This storage content was 97 percent of average for that day. On June 21, 2012, calls were placed by senior water right holders on the Colorado River. As a result, Ruedi Reservoir was called out of fill priority and required to pass inflow and make contract releases. From the middle of June until the end of October, Ruedi Reservoir bypassed all inflow and released 7,634 acre-feet of water for round I and Round II contracts.

On July 3, 2012, storage water was released to support target flows in the 15-Mile reach of the Colorado River. These releases are designed to enhance habitat for endangered fish in the Colorado River. A total of 20,597 acre-feet was released between July 3, 2012, and October 2, 2012 for endangered fish. This total includes 5,000 acre-feet from the firm fish pool, 10,825 acre-feet of mitigation water, and 4,772 acre-feet of Wolford endangered fish water released from Ruedi. No releases were made from the 4-out-of-5 fish pool because the reservoir

did not physical fill. Ruedi Reservoir made 216 acre-feet replacements releases for seepage in WY 2012.

Ruedi ended the water year at a surface elevation of 7,724.4 feet and 66,070 acre-feet in storage. That volume was 75 percent of average for this date.

B. West Slope Collection System and Project Diversions

The import of project water through the Boustead Tunnel began on April 23, 2012, and concluded on June 9, 2012, with seepage being recorded when in priority. The daily discharge record for the diversion structures is included as Appendix D. A total of 13,438 acre-feet was imported during the WY 2012, which is less than a quarter of average and rivals the lowest year, WY 2002, of 13,188 AF. There was no Busk-Ivanhoe water imported through the Boustead Tunnel. The maximum mean daily import was 292.6 cfs on May 22, 2012. The most probable forecasts for the first of February, March, April, and May were 45,200 acre-feet, 53,300 acre-feet, 23,100 acre-feet, and 12,400 acre-feet, respectively.

The total imports for the water year; the accumulated imports to the Arkansas River; the water used for the Twin Lakes Reservoir and Canal Company exchange; and the import water available for allocations by the Southeastern Colorado Water Conservancy District, are shown on Table 5. The 41 years of accumulated imports total 2,094,500 acre-feet, for an average of 51,085 acre-feet per year. A plot of the Boustead Tunnel imports during WY 2012 is shown on Exhibit 5.

C. Twin Lakes Reservoir and Canal Company/Fryingpan-Arkansas Project Exchange

The Bureau of Reclamation is obligated to maintain minimum stream flows in the Roaring Fork River by the authorizing legislation of the project. This is accomplished through an exchange of water with the Twin Lakes Reservoir and Canal Company. On October 1, 2010, the company began bypassing water into the Roaring Fork River on the west slope in exchange for project water stored in Twin Lakes on the east slope. The diversion system was shut down on June 9, 2012. Between June 10 and June 14, 2011, 287.53 acre-feet was bypassed down the west slope through No Name and Midway bypasses.

The total amount of the exchange credited at Twin Lakes Reservoir was 1,533.25 acre-feet. The operating criteria and the monthly summary of the exchange are shown in Appendix C.

D. Turquoise Lake

On September 30, 2011, there were 123,361.3 acre-feet of water (elevation of 9,866.0 feet) stored in Turquoise Lake, 109 percent of average. Releases made to Twin Lakes through the Mt. Elbert Conduit drafted Turquoise Lake to 66,427.85 acre feet (elevation 9,830.84 feet), the lowest storage of the water year, by March 22, 2012. There were 66,857.13 acre-feet of water (elevation 9,831.14 feet) in storage at the end of the water year, 59 percent of average.

Homestake Tunnel imports totaled 41,976.11 acre-feet during the water year, 166 percent of average. The Homestake Reservoir outlet works, valve and the upstream face of the dam underwent repairs in WY 2012. Busk-Ivanhoe imports totaled 3,039.50 acre-feet, 29 percent of average, and were divided between the Pueblo Board of Water Works and the city of Aurora. Project water imports through the Boustead Tunnel totaled 13,437.90 acre-feet, 28 percent of average.

Exhibits 8 and 9 show the precipitation and pan evaporation at Turquoise Lake. Exhibits 5, 6, and 7 show the monthly imports through the Boustead, Homestake, and Busk Ivanhoe Tunnels, respectively. Table 6 and Exhibit 10 depict the monthly operation of Turquoise Lake during WY 2012.

E. Mt. Elbert Conduit/Halfmoon Creek Diversion

During WY 2012, 122,380 acre-feet of water released from Turquoise Lake, and 5,788 acre-feet of water diverted from Halfmoon Creek, were conveyed through the Mt. Elbert Conduit to the Mt. Elbert Forebay, and subsequently to Twin Lakes through the Mt. Elbert Power Plant. An additional 3,920.19 acre-feet of water were released into the conduit from Turquoise Lake for use by the Leadville Federal Fish Hatchery. The water delivered to the hatchery was returned to the Arkansas River and stored in Pueblo Reservoir.

F. Twin Lakes/Mt. Elbert Forebay and Mt. Elbert Pumped-Storage Power Plant

The storage in Twin Lakes was 118,061.17 acre-feet of water (elevation 9,191.14) on September 30, 2011, which is 102 percent of average. The combined storage of Twin Lakes and the Mt. Elbert Forebay was 126,476.3 acre-feet. Twin Lakes releases to Lake Creek were made throughout the winter to pass the entire flow of the Mt. Elbert Conduit, and to transfer the project water stored in the reservoir to Pueblo Reservoir. The native inflow was stored in the Twin Lakes Canal Company storage space from November 15 through March 15. A total of 41,653 acre-feet of project water was released to Lake Creek during this time.

This water was released such that the flow in the Arkansas River at the Wellsville gage was maintained as close to the average October 15 to November 15 trout-spawning flow as possible.

The combined reservoir and forebay water storage reached a low point of 91,573.57 acre-feet on August 26, 2012, and was at its high point of 114,197.86 acre-feet on June 19, 2012. On September 30, 2012, Twin Lakes held 97,941.50 acre-feet (elevation 9,182.00), which was 85 percent of average. Project water was moved in September from Turquoise Lake to Twin Lake to support power plant operations. A total of 5,000 acre-feet of project water was released to support the fishery and augment rafting flows in the Arkansas River during the period of July 1, 2012, to August 15, 2012.

At least one generating/pumping unit was available at the Mt. Elbert Power Plant throughout the 2012 water year. The capacity of one unit is greater than the capacity of the Mt. Elbert Conduit. A total of 278,081 megawatt hours of energy was generated at the power plant, with 826,706 acre-feet of water; 127,842 acre-feet came through the Mt. Elbert Conduit; and 701,879 acre-feet were first pumped to the Mt. Elbert Forebay from Twin Lakes during off-peak electric demand hours. Table 8 depicts the monthly power plant operation for WY 2012.

G. Pueblo Reservoir

The water storage content of Pueblo Reservoir was 166,956.67 acre-feet (elevation 4,857.85 feet) on September 30, 2011, 122 percent of average. Project water released from Turquoise Lake, through the Leadville Federal Fish Hatchery, and from Twin Lakes, was stored in Pueblo Reservoir through the winter and spring. A total of 40,440.52 acre-feet of native inflow was stored in the reservoir under the winter water storage program from November 15, 2011, through March 14, 2012. During the water year, 39,164.21 acre-feet of winter water and 8,791.27 acre-feet of winter water carryover were released, and 1,954.12 acre-feet evaporated. The reservoir reached a high point in storage of 250,053.58 acre-feet (elevation 4,878.98 feet) on March 22, 2012. There were 163,244.16 acre-feet (elevation 4,856.76 feet) in storage on September 30, 2012. This is 117 percent of average and 93,704.84 acre-feet less than a full conservation pool.

Table 9 and Exhibit 20 depict Pueblo Reservoir monthly operations during the 2012 water year. The 2011-2012 winter water storage is shown on Exhibit 17, and the winter water releases are shown on Exhibit 18. The pan evaporation at the reservoir is shown on Exhibit 19. Project water flows are shown on Table 9 and Exhibit 21.

H. Storage Contracts

There were twelve long term contracts for storage of non-project water in project storage space on the east slope in effect in WY 2012. Six of those were permanent contracts: the Twin Lakes Reservoir and Canal Company for 54,452 acre feet; the city of Colorado Springs for 17,416 acre-feet; the city of Aurora for 5,000 acre-feet; the Pueblo Board of Water Works for 5,000 acre feet; Busk-Ivanhoe, Inc., for 10,000 acre-feet; and the Homestake Project for 30,000 acre-feet. There were six long-term contracts in Pueblo Reservoir: Pueblo Board of Water Works, city of Aurora, Colorado Springs, Pueblo West, Fountain, and Security. Twenty-two contracts were interim, 1-year contracts for "if-and-when" storage space in Pueblo Reservoir. Under "if and when" contracts, non-project water may be stored in project storage space as long as that storage space is not required for project water.

I. Project Water Sales and Deliveries

There were 9,882 acre-feet of Fryingpan-Arkansas Project water made available to the Southeastern Colorado Water Conservancy District during WY 2012. The district purchased 9,882 acre-feet and called for 13,589.76 acre-feet of project and project carryover water during the year. Evaporation reduced the project water in storage by 10,646.51 acre-feet. By the end of the water year (September 30, 2012), the district had 3,950.33 acre-feet of 2012 allocated water and 118,814.56 acre-feet of carryover water remaining in storage. Of the 9,882 acre-feet of project water released, 3,514 acre-feet were for municipal and industrial use, and 6,368 acre-feet were for irrigation. The monthly release of project water from Pueblo Reservoir is shown on Exhibit 21.

J. Reservoir Storage Allocation Data

Table 10 presents the reservoir storage allocations for the five project reservoirs.

K. Reservoir Evaporation and Precipitation

Tables 12 and 13 present the monthly average evaporation and precipitation at the four weather stations near project facilities. When an evaporation pan is not in service and a reservoir is not completely ice-covered, the daily water surface evaporation is computed using seasonal evaporation factors. Those factors are listed in Table 11. The assumption is that there is no evaporation from a reservoir water surface when ice completely covers the reservoir.

L. Flood Control Benefits

The Army Corps of Engineers estimated that the operations at Ruedi Reservoir during WY 2012 didn't prevent flood damages. Since impoundment, Ruedi Reservoir has prevented a total of \$3,002,000 in potential flood damages.

The snowpack in the Arkansas River Basin was below average during WY 2012. The Army Corps of Engineers estimated that the operations at Pueblo Reservoir during WY 2012 didn't prevent flood damages. Since impoundment, Pueblo Reservoir has prevented a total of \$31,476,200 in potential flood damages.

Table 14 shows the historic flood control benefits provided by Pueblo and Ruedi Dams.

1. Ruedi Reservoir Water Year 2012 Operations

Water Year: Operations
Unit: 1,000 AF

Month	Inflow	Evaporation	Outflow	End of Month Content	Water Surface Elevation
OCT 2011	5.2	0	10.5	83.5	7745.82
NOV 2011	3.6	0	5.1	82.0	7744.09
DEC 2011	2.5	0	5.4	79.2	7740.78
JAN 2012	2.4	0	5.5	76.1	7737.09
FEB 2012	2.1	0	5.1	73.1	7733.41
MAR 2012	3.7	0	5.4	71.4	7731.23
APR 2012	8.9	0	2.9	77.4	7738.68
MAY 2012	14.4	0.2	6.4	85.2	7747.70
JUN 2012	12.4	0.6	7.1	89.8	7752.88
JUL 2012	7.4	0.5	11.5	85.2	7747.76
AUG 2012	5.0	0.4	13.5	76.4	7737.41
SEP 2012	3.9	0.2	14.0	66.1	7724.36
Total	71.5	1.9	92.4		

2. Ruedi Reservoir Releases for Contracts

Water Year: Operations
Unit: 1,000 AF

Month	Round I	Round II Non Fish	Round II Fish
OCT 2011			
NOV 2011			
DEC 2011			
JAN 2012			
FEB 2012			
MAR 2012			
APR 2012			
MAY 2012			
JUN 2012	0.096	0.098	
JUL 2012	0.067	0.712	
AUG 2012	0.048	0.711	
SEP 2012	0.046	0.586	4.518
OCT 2012	0.040	0.456	0.254
Total	0.298	2.563	4.772

3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

April

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	FRYINGPAN		RUEDI CALLED OUT? (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
							ROCKY FORK CREEK (CFS)	RIVER GAGE BELOW DAM (CFS)					
SUN	4/1/2012	7,731.40	71,491	157	0	90	4	93	NO	39	0	0	2,301
MON	4/2/2012	7,731.61	71,657	174	0	90	4	94	NO	39	0	0	2,385
TUE	4/3/2012	7,731.73	71,752	138	0	90	4	94	NO	39	0	0	2,267
WED	4/4/2012	7,731.84	71,839	113	0	69	4	73	NO	39	0	0	1,865
THU	4/5/2012	7,731.98	71,951	117	0	61	4	65	NO	39	0	0	1,512
FRI	4/6/2012	7,732.04	71,998	85	0	61	4	65	NO	39	0	0	1,134
SAT	4/7/2012	7,732.16	72,094	109	0	61	4	65	NO	39	0	0	955
SUN	4/8/2012	7,732.29	72,197	113	0	61	4	65	NO	39	0	0	837
MON	4/9/2012	7,732.44	72,317	121	0	61	4	65	NO	39	0	0	722
TUE	4/10/2012	7,732.70	72,525	152	0	48	4	52	NO	39	0	0	668
WED	4/11/2012	7,733.08	72,829	190	0	37	4	41	NO	39	0	0	667
THU	4/12/2012	7,733.47	73,142	196	0	38	4	42	NO	39	0	0	839
FRI	4/13/2012	7,733.75	73,367	151	0	38	4	42	NO	39	0	0	1,066
SAT	4/14/2012	7,734.03	73,593	152	0	38	4	42	NO	39	0	0	937
SUN	4/15/2012	7,734.29	73,803	144	0	38	5	43	NO	39	0	0	784
MON	4/16/2012	7,734.50	73,973	123	0	38	5	42	NO	39	0	0	705
TUE	4/17/2012	7,734.66	74,103	101	0	36	5	40	NO	39	0	0	629
WED	4/18/2012	7,734.85	74,257	114	0	36	5	41	NO	39	0	0	531
THU	4/19/2012	7,735.11	74,468	143	0	37	5	42	NO	39	0	0	477
FRI	4/20/2012	7,735.34	74,655	131	0	36	5	41	NO	39	0	0	477
SAT	4/21/2012	7,735.56	74,835	127	0	36	5	41	NO	39	0	0	441
SUN	4/22/2012	7,735.88	75,096	168	0	36	5	41	NO	39	0	0	387
MON	4/23/2012	7,736.25	75,399	189	0	37	4	41	NO	39	0	0	383
TUE	4/24/2012	7,736.57	75,662	169	0	37	4	41	NO	39	0	0	680
WED	4/25/2012	7,736.92	75,950	182	0	37	5	41	NO	39	0	0	1,104
THU	4/26/2012	7,737.32	76,280	203	0	37	5	42	NO	39	0	0	1,604
FRI	4/27/2012	7,737.81	76,685	241	0	37	6	42	NO	39	0	0	2,028
SAT	4/28/2012	7,738.16	76,976	183	0	37	7	43	NO	39	0	0	2,502
SUN	4/29/2012	7,738.44	77,208	154	0	37	8	44	NO	39	0	0	2,030
MON	4/30/2012	7,738.68	77,408	150	0	49	8	57	NO	39	0	0	1,566
Averages		7,734.49	73,984	150	0	48	5	53			0		1,149
Totals (acft)				8,912	0	2,860	277	3,137			0	0	68,397

Notes:

3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

May

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW (CFS)	RUEDI CALLED (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW w/o FISH REL (CFS)	ENDANGERE FISH RELEASE (CFS)	CUMULATIV FISH RELEASE (AC-FT)	PALISAD GAGE (CFS)
SUN	5/6/2012	7,740.24	78,716	241	4	110	10	121	NO	110	0	0	2,232
MON	5/7/2012	7,740.55	78,977	246	4	110	11	121	NO	110	0	0	2,459
TUE	5/8/2012	7,740.81	79,197	225	4	110	10	121	NO	110	0	0	2,255
WED	5/9/2012	7,741.07	79,417	225	4	110	10	120	NO	110	0	0	1,841
THU	5/10/2012	7,741.36	79,663	238	4	111	10	120	NO	110	0	0	1,689
FRI	5/11/2012	7,741.65	79,909	239	4	111	10	120	NO	110	0	0	1,841
SAT	5/12/2012	7,741.94	80,156	239	4	111	10	120	NO	110	0	0	2,083
SUN	5/13/2012	7,742.20	80,378	226	4	111	10	121	NO	110	0	0	2,040
MON	5/14/2012	7,742.43	80,575	214	4	111	10	121	NO	110	0	0	1,840
TUE	5/15/2012	7,742.67	80,780	218	4	111	10	121	NO	110	0	0	1,642
WED	5/16/2012	7,742.96	81,029	245	4	116	10	126	NO	110	0	0	1,765
THU	5/17/2012	7,743.25	81,278	245	4	116	10	126	NO	110	0	0	2,024
FRI	5/18/2012	7,743.54	81,528	240	4	111	10	121	NO	110	0	0	2,006
SAT	5/19/2012	7,743.89	81,831	255	4	99	10	109	NO	110	0	0	2,183
SUN	5/20/2012	7,744.19	82,090	234	4	100	10	110	NO	110	0	0	2,133
MON	5/21/2012	7,744.47	82,333	226	4	100	10	110	NO	110	0	0	1,874
TUE	5/22/2012	7,744.78	82,602	239	4	100	10	110	NO	110	0	0	1,823
WED	5/23/2012	7,745.20	82,968	288	4	100	10	110	NO	110	0	0	2,249
THU	5/24/2012	7,745.60	83,317	280	4	100	11	111	NO	110	0	0	2,748
FRI	5/25/2012	7,745.92	83,597	245	4	100	11	111	NO	110	0	0	2,379
SAT	5/26/2012	7,746.21	83,851	232	4	100	12	112	NO	110	0	0	1,957
SUN	5/27/2012	7,746.53	84,132	245	4	100	11	111	NO	110	0	0	1,838
MON	5/28/2012	7,746.82	84,388	232	4	100	11	111	NO	110	0	0	2,016
TUE	5/29/2012	7,747.11	84,643	231	4	98	11	109	NO	110	0	0	1,656
WED	5/30/2012	7,747.39	84,891	227	4	98	10	108	NO	110	0	0	1,536
Averages		7,734.49	73,984	150	0	48	5	53			0		1,149
Totals (acft)				8,912	0	2,860	277	3,137			0	0	68,397

Notes: Releases of water to support 15-Mile Reach target flows ceased on 10/3. A total of 20,597* acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 *The total fish water for the Recovery Program includes 4,772 acre-feet of Round II contract water.
 The values presented in these tables were compiled from operational records.
 These are preliminary records and open to revision.

3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

June

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL	ROCKY	FRYINGPAN	RUEDI	REQUIRED	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
						RESERVOIR RELEASE (CFS)	FORK CREEK (CFS)	RIVER GAGE BELOW (CFS)	CALLLED (1= YES) (0= NO)	MIN FLOW BELOW w/o FISH REL (CFS)			
FRI	6/1/2012	7,748.09	85,511	281	9	97	9	106	NO	110	0	0	1,782
SAT	6/2/2012	7,748.52	85,893	302	9	100	9	109	NO	110	0	0	2,032
SUN	6/3/2012	7,748.94	86,267	298	9	100	9	109	NO	110	0	0	2,342
MON	6/4/2012	7,749.36	86,642	299	9	100	9	109	NO	110	0	0	2,112
TUE	6/5/2012	7,749.78	87,018	300	10	101	9	110	NO	110	0	0	2,039
WED	6/6/2012	7,750.19	87,387	297	10	101	9	110	NO	110	0	0	2,051
THU	6/7/2012	7,750.61	87,765	302	10	102	8	110	NO	110	0	0	1,975
FRI	6/8/2012	7,751.00	88,117	289	10	102	8	110	NO	110	0	0	1,790
SAT	6/9/2012	7,751.37	88,452	281	10	103	8	111	NO	110	0	0	1,617
SUN	6/10/2012	7,751.67	88,724	249	10	102	8	110	NO	110	0	0	1,500
MON	6/11/2012	7,751.94	88,969	236	10	102	8	110	NO	110	0	0	1,329
TUE	6/12/2012	7,752.16	89,170	213	10	103	7	110	NO	110	0	0	968
WED	6/13/2012	7,752.36	89,352	204	10	103	7	110	NO	110	0	0	733
THU	6/14/2012	7,752.56	89,535	205	10	103	7	110	NO	110	0	0	615
FRI	6/15/2012	7,752.72	89,681	187	10	103	6	110	NO	110	0	0	632
SAT	6/16/2012	7,752.85	89,800	173	10	103	6	109	NO	110	0	0	713
SUN	6/17/2012	7,752.98	89,919	172	10	103	6	109	NO	110	0	0	727
MON	6/18/2012	7,753.11	90,038	175	10	105	6	111	NO	110	0	0	697
TUE	6/19/2012	7,753.23	90,148	172	10	107	5	112	NO	110	0	0	694
WED	6/20/2012	7,753.31	90,221	154	10	107	5	112	NO	110	0	0	645
THU	6/21/2012	7,753.34	90,249	163	10	139	5	144	YES	168	0	0	545
FRI	6/22/2012	7,753.31	90,221	168	10	172	5	177	YES	173	0	0	446
SAT	6/23/2012	7,753.28	90,194	155	10	159	5	164	YES	160	0	0	384
SUN	6/24/2012	7,753.26	90,175	149	10	149	5	153	YES	154	0	0	430
MON	6/25/2012	7,753.21	90,129	140	10	153	5	157	YES	144	0	0	535
TUE	6/26/2012	7,753.13	90,056	127	10	154	4	159	YES	131	0	0	517
WED	6/27/2012	7,753.05	89,983	128	10	155	4	159	YES	132	0	0	511
THU	6/28/2012	7,753.01	89,946	136	10	145	4	150	YES	141	0	0	511
FRI	6/29/2012	7,752.95	89,891	123	10	141	5	146	YES	128	0	0	465
SAT	6/30/2012	7,752.88	89,827	118	10	141	5	146	YES	123	0	0	432
Averages		7,751.94	88,976	207	10	119	7	125			0		1,059
Totals (acft)				12,288	574	7,052	389	7,441			0	0	63,019

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 10/3. A total of 20,597* acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 *The total fish water for the Recovery Program includes 4,772 acre-feet of Round II contract water.
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3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

July

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW (CFS)	RUEDI CALLED (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
SUN	7/1/2012	7,752.79	89,745	108	9	141	5	146	YES	113	0	0	443
MON	7/2/2012	7,752.70	89,663	108	9	141	5	146	YES	113	0	0	419
TUE	7/3/2012	7,752.57	89,544	102	9	154	5	159	YES	107	13	25	357
WED	7/4/2012	7,752.38	89,370	111	9	190	5	195	YES	116	50	124	341
THU	7/5/2012	7,752.19	89,197	112	9	190	5	195	YES	116	50	223	362
FRI	7/6/2012	7,752.07	89,088	144	9	190	5	195	YES	148	50	322	471
SAT	7/7/2012	7,752.05	89,069	189	9	190	5	194	YES	194	50	421	614
SUN	7/8/2012	7,751.93	88,960	143	9	190	5	194	YES	148	50	521	835
MON	7/9/2012	7,751.81	88,851	143	9	190	5	195	YES	149	50	620	1,119
TUE	7/10/2012	7,751.64	88,697	121	9	190	6	195	YES	126	50	719	851
WED	7/11/2012	7,751.44	88,515	107	9	190	5	195	YES	112	50	818	548
THU	7/12/2012	7,751.23	88,325	103	9	190	5	195	YES	108	50	917	455
FRI	7/13/2012	7,751.00	88,117	95	9	191	5	196	YES	100	50	1,017	401
SAT	7/14/2012	7,750.78	87,918	99	9	191	5	196	YES	104	50	1,116	372
SUN	7/15/2012	7,750.61	87,765	122	9	190	5	195	YES	126	50	1,215	490
MON	7/16/2012	7,750.46	87,630	131	9	191	4	195	YES	136	50	1,314	539
TUE	7/17/2012	7,750.39	87,567	168	9	191	4	195	YES	172	50	1,413	613
WED	7/18/2012	7,750.22	87,414	122	9	191	4	195	YES	127	50	1,512	751
THU	7/19/2012	7,750.07	87,279	131	9	191	5	195	YES	136	50	1,612	748
FRI	7/20/2012	7,749.87	87,099	110	9	191	4	196	YES	114	50	1,711	585
SAT	7/21/2012	7,749.67	86,920	110	9	192	4	196	YES	114	50	1,810	577
SUN	7/22/2012	7,749.50	86,768	125	9	193	4	196	YES	128	50	1,909	504
MON	7/23/2012	7,749.31	86,598	115	9	193	3	196	YES	119	50	2,008	651
TUE	7/24/2012	7,749.19	86,490	148	9	193	3	196	YES	151	50	2,107	691
WED	7/25/2012	7,749.03	86,347	129	9	192	3	195	YES	131	50	2,207	765
THU	7/26/2012	7,748.83	86,169	111	9	192	3	195	YES	113	50	2,306	969
FRI	7/27/2012	7,748.62	85,982	106	8	192	3	194	YES	109	50	2,405	842
SAT	7/28/2012	7,748.40	85,786	101	8	191	3	194	YES	104	50	2,504	684
SUN	7/29/2012	7,748.19	85,599	105	8	191	3	194	YES	108	50	2,603	630
MON	7/30/2012	7,747.97	85,404	102	8	192	0	192	YES	102	50	2,703	665
TUE	7/31/2012	7,747.76	85,218	102	8	188	0	188	YES	102	75	2,851	648
Averages		7,750.47	87,648	120	9	186	4	190			46		611
Totals (acft)				7,384	529	11,465	246	11,711			2,851	2,851	37,571

NOTES:

Releases of water to support 15-Mile Reach target flows ceased on 10/3. A total of 20,597* acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.

* The total fish water for the Recovery Program includes 4,772 acre-feet of Round II contract water.

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3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

August

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW DAM (CFS)	RUEDI CALLED (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
WED	8/1/2012	7,747.57	85,050	98	6	176	0	176	YES	98	125	3,099	657
THU	8/2/2012	7,747.35	84,855	99	6	191	1	192	YES	100	125	3,347	570
FRI	8/3/2012	7,747.11	84,643	88	6	189	3	191	YES	91	125	3,595	442
SAT	8/4/2012	7,746.86	84,423	84	6	189	3	192	YES	87	125	3,843	556
SUN	8/5/2012	7,746.59	84,185	75	6	189	3	192	YES	78	125	4,091	524
MON	8/6/2012	7,746.30	83,930	76	6	198	3	201	YES	78	125	4,339	447
TUE	8/7/2012	7,746.05	83,711	111	6	215	3	218	YES	113	125	4,587	396
WED	8/8/2012	7,745.76	83,457	94	6	216	3	219	YES	97	125	4,835	441
THU	8/9/2012	7,745.41	83,151	77	6	225	3	228	YES	80	125	5,083	530
FRI	8/10/2012	7,745.04	82,828	84	6	241	3	244	YES	87	125	5,331	503
SAT	8/11/2012	7,744.66	82,498	79	6	240	3	243	YES	82	125	5,579	489
SUN	8/12/2012	7,744.29	82,177	84	6	240	3	242	YES	86	125	5,827	474
MON	8/13/2012	7,743.96	81,891	92	6	230	3	232	YES	94	125	6,074	457
TUE	8/14/2012	7,743.70	81,666	101	6	208	3	211	YES	103	125	6,322	557
WED	8/15/2012	7,743.42	81,425	93	6	209	2	211	YES	95	125	6,570	606
THU	8/16/2012	7,743.11	81,158	80	6	208	2	210	YES	82	125	6,818	520
FRI	8/17/2012	7,742.79	80,883	75	6	207	2	210	YES	77	125	7,066	389
SAT	8/18/2012	7,742.50	80,635	88	6	208	2	210	YES	91	125	7,314	341
SUN	8/19/2012	7,742.18	80,361	76	6	208	2	210	YES	78	125	7,562	330
MON	8/20/2012	7,741.83	80,063	63	6	208	2	210	YES	65	125	7,810	349
TUE	8/21/2012	7,741.51	79,790	76	6	207	2	209	YES	78	125	8,058	301
WED	8/22/2012	7,741.11	79,451	49	6	214	2	216	YES	51	131	8,317	313
THU	8/23/2012	7,740.71	79,112	80	6	245	2	247	YES	82	145	8,605	322
FRI	8/24/2012	7,740.32	78,783	85	6	245	2	247	YES	87	145	8,893	442
SAT	8/25/2012	7,739.92	78,446	81	6	245	2	247	YES	83	145	9,180	622
SUN	8/26/2012	7,739.51	78,102	76	6	244	2	246	YES	79	145	9,468	579
MON	8/27/2012	7,739.08	77,742	68	6	244	2	246	YES	70	145	9,756	555
TUE	8/28/2012	7,738.66	77,392	73	6	244	2	246	YES	75	145	10,043	486
WED	8/29/2012	7,738.25	77,050	77	6	244	2	246	YES	79	170	10,380	433
THU	8/30/2012	7,737.83	76,702	74	6	244	2	246	YES	76	170	10,718	409
FRI	8/31/2012	7,737.41	76,354	75	6	244	2	246	YES	77	155	11,025	416
Averages		7,742.93	81,029	82	6	220	2	222			133		466
Totals (acft)				5,015	362	13,516	135	13,651			8,174	11,025	28,673

NOTES:

Releases of water to support 15-Mile Reach target flows ceased on 10/3. A total of 20,597* acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.

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3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

September

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLO (CFS)	EVAP. (CFS)	TOTAL	ROCKY	FRYINGPAN	RUEDI	REQUIRED	ENDANGERED	CUMULATIV	PALISADE
						RESERVOI RELEASE (CFS)	FORK CREEK (CFS)	RIVER GAGE BELOW (CFS)	CALLED (1= YES) (0= NO)	MIN FLOW BELOW RUEDI w/o FISH REL (CFS)	FISH RELEASE (CFS)	FISH RELEASE (AC-FT)	GAGE (CFS)
SAT	9/1/2012	7,736.99	76,008	71	3	243	2	245	YES	73	155	11,332	583
SUN	9/2/2012	7,736.56	75,654	67	3	242	2	244	YES	69	155	11,640	443
MON	9/3/2012	7,736.12	75,293	64	3	242	2	244	YES	66	155	11,947	503
TUE	9/4/2012	7,735.66	74,916	56	3	242	2	244	YES	58	155	12,255	478
WED	9/5/2012	7,735.21	74,549	55	3	237	2	239	YES	57	155	12,562	420
THU	9/6/2012	7,734.81	74,224	57	3	217	2	219	YES	59	155	12,870	393
FRI	9/7/2012	7,734.45	73,932	74	3	218	2	220	YES	76	155	13,177	370
SAT	9/8/2012	7,734.06	73,617	62	3	217	2	219	YES	64	155	13,484	306
SUN	9/9/2012	7,733.66	73,295	58	3	217	2	219	YES	60	155	13,792	288
MON	9/10/2012	7,733.25	72,965	54	3	217	2	219	YES	56	155	14,099	299
TUE	9/11/2012	7,732.89	72,677	75	3	217	2	219	YES	77	155	14,407	299
WED	9/12/2012	7,732.55	72,405	83	3	217	2	219	YES	85	155	14,714	343
THU	9/13/2012	7,732.17	72,102	75	3	224	2	226	YES	76	155	15,022	433
FRI	9/14/2012	7,731.68	71,713	61	3	253	2	255	YES	62	168	15,354	477
SAT	9/15/2012	7,731.16	71,301	58	3	262	2	264	YES	60	180	15,711	461
SUN	9/16/2012	7,730.63	70,883	55	3	262	2	264	YES	56	180	16,068	390
MON	9/17/2012	7,730.11	70,475	59	3	262	2	264	YES	61	180	16,425	352
TUE	9/18/2012	7,729.58	70,060	56	3	262	2	264	YES	58	180	16,782	343
WED	9/19/2012	7,729.05	69,647	57	3	262	2	263	YES	58	180	17,139	310
THU	9/20/2012	7,728.54	69,252	56	3	252	2	253	YES	57	180	17,496	316
FRI	9/21/2012	7,728.06	68,881	58	3	242	2	244	YES	60	180	17,853	302
SAT	9/22/2012	7,727.57	68,504	55	3	242	2	244	YES	57	180	18,210	297
SUN	9/23/2012	7,727.08	68,129	56	3	242	2	244	YES	58	180	18,567	280
MON	9/24/2012	7,726.67	67,815	87	3	242	2	244	YES	89	180	18,924	279
TUE	9/25/2012	7,726.27	67,511	91	3	242	2	244	YES	93	180	19,281	336
WED	9/26/2012	7,725.84	67,185	81	3	242	2	244	YES	82	130	19,539	389
THU	9/27/2012	7,725.40	66,852	77	3	242	2	244	YES	79	130	19,797	408
FRI	9/28/2012	7,725.00	66,551	78	3	227	2	229	YES	80	115	20,026	427
SAT	9/29/2012	7,724.68	66,311	72	3	190	2	192	YES	74	80	20,185	465
SUN	9/30/2012	7,724.36	66,071	72	3	190	2	192	YES	74	80	20,343	438
Averages		7,730.67	70,959	66	3	236	2	237			157		381
Totals (acft)				3,929	195	14,017	110	14,127			9,318	20,343	22,665

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 10/3. A total of 20,597* acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
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3. Ruedi Reservoir Releases for Endangered Fish, Water Year 2012

October

DAY	DATE	ELEV. (FT)	STORAGE (AC-FT)	INFLOW (CFS)	EVAP. (CFS)	TOTAL RESERVOIR RELEASE (CFS)	ROCKY FORK CREEK (CFS)	FRYINGPAN RIVER GAGE BELOW DAM (CFS)	RUEDI CALLED (1= YES) (0= NO)	REQUIRED MIN FLOW BELOW RUEDI w/o FISH REL	ENDANGERED FISH RELEASE (CFS)	CUMULATIVE FISH RELEASE (AC-FT)	PALISADE GAGE (CFS)
MON	10/1/2012	7,724.07	65,854	63	1	171	2	173	YES	65	80	20,502	424
TUE	10/2/2012	7,723.91	65,734	61	1	120	2	122	YES	63	48	20,597	396
WED	10/3/2012	7,723.82	65,667	44	1	77	2	78	YES	46	0	20,597	359
THU	10/4/2012	7,723.73	65,600	44	1	77	2	79	YES	46	0	20,597	344
FRI	10/5/2012	7,723.62	65,518	37	1	77	2	79	YES	39	0	20,597	261
SAT	10/6/2012	7,723.51	65,436	36	1	76	2	78	YES	38	0	20,597	225
SUN	10/7/2012	7,723.41	65,362	40	1	76	2	78	YES	42	0	20,597	236
MON	10/8/2012	7,723.31	65,287	40	1	76	2	78	YES	42	0	20,597	221
TUE	10/9/2012	7,723.16	65,176	15	1	70	2	71	YES	16	0	20,597	197
WED	10/10/2012	7,723.14	65,161	42	1	48	2	50	YES	44	0	20,597	210
THU	10/11/2012	7,723.11	65,138	38	1	48	2	50	YES	40	0	20,597	199
FRI	10/12/2012	7,723.11	65,138	49	1	48	2	50	YES	51	0	20,597	218
SAT	10/13/2012	7,723.13	65,153	57	1	48	2	50	YES	59	0	20,597	346
SUN	10/14/2012	7,723.14	65,161	53	1	48	2	50	YES	55	0	20,597	379
MON	10/15/2012	7,723.15	65,168	53	1	48	2	50	YES	55	0	20,597	436
TUE	10/16/2012	7,723.17	65,183	57	1	48	2	50	YES	59	0	20,597	451
WED	10/17/2012	7,723.15	65,168	42	1	48	2	50	YES	44	0	20,597	431
THU	10/18/2012	7,723.15	65,168	49	1	48	2	50	YES	51	0	20,597	404
FRI	10/19/2012	7,723.15	65,168	49	1	48	2	50	YES	51	0	20,597	405
SAT	10/20/2012	7,723.14	65,161	46	1	48	2	50	YES	47	0	20,597	388
SUN	10/21/2012	7,723.12	65,146	42	1	48	2	50	YES	44	0	20,597	376
MON	10/22/2012	7,723.10	65,131	42	1	48	2	50	YES	44	0	20,597	421
TUE	10/23/2012	7,723.09	65,123	45	1	48	2	50	NO	47	0	20,597	410
WED	10/24/2012	7,723.06	65,101	38	1	48	2	50	NO	40	0	20,597	468
THU	10/25/2012	7,723.07	65,108	53	1	48	2	50	NO	54	0	20,597	897
FRI	10/26/2012	7,723.03	65,079	33	1	47	2	49	NO	35	0	20,597	1,145
SAT	10/27/2012	7,723.02	65,071	45	1	47	2	49	NO	47	0	20,597	1,149
SUN	10/28/2012	7,723.01	65,064	45	1	47	2	49	NO	46	0	20,597	1,122
MON	10/29/2012	7,723.00	65,057	45	1	47	2	49	NO	47	0	20,597	1,113
TUE	10/30/2012	7,722.99	65,049	45	1	48	2	49	NO	47	0	20,597	1,127
WED	10/31/2012	7,722.97	65,034	39	1	46	3	48	NO	42	0	20,597	1,434
Averages		7,723.24	65,237	45	1	60	2	62			4		522
Totals (acft)				2,747	71	3,711	116	3,828			254	20,597	32,115

NOTES: Releases of water to support 15-Mile Reach target flows ceased on 10/3. A total of 20,597* acre-feet were released to support Recovery Program target flows in the 15-Mile Reach.
 *The total fish water for the Recovery Program includes 4,772 acre-feet of Round II contract water.
 The values presented in these tables were compiled from operational records.
 These are preliminary records and open to revision.

4. Transmountain Diversions, Water Year 2012

Fryingpan-Arkansas Project
 Transmountain Diversions
 Water Year 2012
 Unit: Acre-Feet

Diversion	Apr	May	Jun	Jul	Aug	Sep	Total
South Fork	245	1068	297				1,610
No Name	33	293	30				357
Hunter	65	526	248				840
Midway	50	1,125	351				1,527
Sawyer	141	1,097	306				1,544
Chapman ¹	213	1779	0				1,992
Subtotal	748	5,888	1,232				7,868
Carter	123	651	2				776
North Fork	0	154	35				189
Mormon	101	1,004					1,105
North Cunningham	38	539	73				650
Middle Cunningham ²	12	604					616
Ivanhoe	114	571	59				744
Granite	19	593	140				752
Fryingpan	345	1,264	441				2,050
Lily Pad	58	530	65				653
Subtotal	810	5,910	815				7,535
Total	1,558	11,798	2,047				15,403
Boustead Tunnel ³		Oct-Apr 2,488	9,335	1,912	107	30	13,438

¹ Does not include No Name, Hunter, Sawyer and Midway

² Includes South Cunningham

³ The difference between total diversion and Charles H. Boustead Tunnel results from the accuracy limitations of the measurement.

5. Fryingpan-Arkansas Project Imports - Charles H. Boustead Tunnel Outlet

Fryingpan-Arkansas Project Imports
Charles H. Boustead Tunnel Outlet
Unit: 1,000 Acre-feet

Water Year	Imports	Accumulated Imports	Twin Lakes Exchange	Available to SECWCD
1972	32	32	0	0
1973	36.8	68.8	0	16
1974	34.1	102.9	0	18.6
1975	37.2	140.1	0	25
1976	26.9	167	0	24
1977	11.4	178.4	0	25
1978	49.2	227.6	0	25
1979	53.7	281.3	0	25.6
1980	55.7	337	0	70
1981	34.6	371.6	0	25
1982	75.2	446.8	2.7	68
1983	90.81	537.6	.3	125
1984	110.1	647.7	1.9	210
1985	70.2	717.9	1.7	289.9
1986	30.3	748.2	1.5	300.3
1987	2.2	750.4	1.1	288
1988	13.4	763.8	2	247.8
1989	36.2	800	1.7	197.6
1990	46.6	846.6	1.7	142.1
1991	59.1	905.7	1.5	58.7
1992	54.8	960.5	1.2	32.9
1993	86.6	1047.1	2.3	70.1
1994	52.2	1099.3	1.3	51.7
1995	90.5	1189.8	2.3	55
1996	36.9	1226.7	1.8	110
1997	78.6	1305.3	1.8	116
1998	51.3	1356.6	2.6	102
1999	40.8	1397.4	2.1	127.5
2000	44.8	1442.2	1.7	171.6
2001	45.3	1487.5	2.1	67.5
2002	13.2	1500.7	1.5	8.5
2003	54.9	1555.6	2.4	37.5
2004	27.4	1583	1.3	15.3
2005	54.6	1637.6	3	40.8
2006	61.2	1698.8	3	49.2
2007	54.2	1753	3	40.4
2008	90	1843	3	83
2009	82.7	1925.7	3	78
2010	56.5	1982.2	3	44
2011	98.9	2081.1	2.3	75
2012	13.4	2094.5	1.5	9.9

Restriction: Not to exceed 120 KAF in 1 year
 Not to exceed 2,352.8 KAF acre-feet in 34 consecutive years.
 The imports between 1978 and 2012 are 1916.11 KAF
 1983 includes 3,120 acre-feet imported through the Twin Lakes Tunnel

6. Turquoise Lake Water Year 2012 Operations

Water Year: 2012 Operations

Unit: 1,000 AF

Month	Busk-Ivanhoe Imports through Carlton	Busk-Ivanhoe Imports through Boustead	Homestake Imports	Project Imports	Native Inflow	Total Inflow	Evap	Total Outflow	End of Month Content	Water Surface Elevation
OCT 2011	0.1	0	0	0.1	0.2	0.5	0.3	1.1	122.45	9865.5
NOV 2011	0	0	1.3	0.1	1.3	2.7	0.2	20.7	104.27	9854.9
DEC 2011	0	0	15.2	0.1	1.4	16.7	0	22.5	98.47	9851.4
JAN 2012	0	0	15.2	0.1	1.5	16.8	0	22.5	92.80	9848.0
FEB 2012	0	0	7.2	0.1	1.5	8.9	0	20.9	80.78	9840.4
MAR 2012	0	0	0	0.1	1.4	1.6	0	15.7	66.64	9831.0
APR 2012	0.1	0	0.4	1.6	2.3	4.9	0.1	1.2	70.23	9833.5
MAY 2012	1.4	0	1.6	9.5	3.9	16.3	0.6	1.9	84.12	9842.6
JUN 2012	0.7	0	0.8	1.5	2.2	5.7	0.8	1.5	87.40	9844.6
JUL 2012	0.1	0	0	0.1	1.0	1.0	0.4	1.3	86.70	9844.2
AUG 2012	0	0	0	0	1.2	1.0	0.4	4.9	82.34	9841.4
SEP 2012	0	0	0	0	1.5	1.5	0.4	16.5	66.86	9831.1
Total	3.0	0	41.7	13.4	19.4	77.6	3.2	130.8		

7. Twin Lakes/Mt. Elbert Forebay Water Year 2012 Operations

Twin Lakes/Mt. Elbert Forebay
Water Year 2012 Operations
Unit: 1,000 Acre-Feet

Date	Twin Lakes Canal Company			Mt. Elbert Conduit		Native Inflow ¹	Total Inflow	Evap	Total Outflow	End of Month Content ²	Water Elevation ³ (FEET)
	Imports	Winter	Pri/Native	Halfmoon	Project Water						
OCT 2011	0.9	0	0	0	0.6	2.4	3.9	0.5	14.4	115.5	9186.2
NOV 2011	0.6	1.2	0	0	20.1	0.5	21.2	0.2	17.6	118.8	9187.6
DEC 2011	0.5	1.4	0	0	22.0	0	21.9	0	21.7	119.0	9187.8
JAN 2012	0.2	1.1	0	0	21.9	0.1	22.3	0	24.8	116.5	9187.1
FEB 2012	0.2	0.8	0	0	20.4	0.4	21.1	0	26.1	111.4	9184.2
MAR 2012	0.3	0.4	0	0	15.3	0	15.6	0	15.7	111.3	9184.4
APR 2012	2.3	0	0	0.1	0.6	3.4	6.4	0.4	10.4	106.8	9182.2
MAY 2012	9.1	0	6.6	2.0	0.6	11.6	23.3	1.2	12.7	116.3	9186.6
JUN 2012	6.7	0	7.5	2.1	0.6	19.2	19.2	1.6	13.6	120.3	9188.4
JUL 2012	1.9	0	0.4	0.6	0.6	4.6	7.7	0.9	18.4	108.7	9183.6
AUG 2012	0.1	0	0.2	0.7	4.4	4.0	9.0	0.7	16.8	100.2	9179.5
SEP 2012	0.3	0	0.2	0.1	15.3	1.9	17.7	0.7	11.6	105.6	9182.0
TOTAL	23.1	4.8	14.9	5.6	122.3	48.1	189.3	6.3	203.9		

¹ Computed native inflow daily totals may not equal monthly totals because of differences in computation methods

² Contents of both Twin Lakes and Mt. Elbert Forebay

³ Elevation of Twin Lakes

8. Mt. Elbert Pumped-Storage Power Plant Water Year 2012 Operations

Water Year 2012

Month	Net Generation (mWh)	Gross Generation (mWh)	Inflow to Mt. Elbert (acre-ft)	Water Through Generator (acre-ft)	Water Pumped From Twin Lakes To Forebay (mWh)
OCT 2011	7,885,000	8,084,960	492	24,550	24,423
NOV 2011	22,705,000	22,98,4310	20,553	66,795	48,079
DEC 2011	24,410,000	24,780,040	21,999	72,903	50,917
JAN 2012	29,584,000	29,955,650	22,019	89,049	66,328
FEB 2012	22,366,000	22,737,157	20,517	69,180	50,471
MAR 2012	18,422,000	18,698,824	15,031	57,836	42,196
APR 2012	13,728,000	13,950,030	540	47,615	47,365
MAY 2012	18,426,000	18,626,871	2,467	57,822	55,493
JUN 2012	20,103,000	20,28,2078	2,569	60,765	58,023
JUL 2012	26,553,000	26,755,478	1,113	80,634	78,183
AUG 2012	36,099,000	38,192,160	5,060	104,657	99,662
SEP 2012	32,823,000	33,033,837	15,482	94,900	80,739
TOTAL	273,104,000	278,081,395	127,842	826,706	701,879

9. Pueblo Reservoir Water Year 2012 Operations

Water Year 2012
Units: 1,000 Acre-Feet

Month	Project Inflow	Other Inflow	Native Inflow	Total Inflow	Evap	Project Outflow	Winter Water Outflow	Total Outflow	End of Month Content	Water Surface Elevation
OCT 2011	2.5	2.6	16.1	21.2	1.2	1.2	0.2	19.9	167.1	4857.88
NOV 2011	5.7	4.4	18.8	28.9	0.7	0.2	0.1	16.7	178.6	4861.17
DEC 2011	9.6	2.8	16.7	29.1	0.5	0.2	0.1	8.2	199.1	4866.68
JAN 2012	11.5	1.4	15.9	28.8	0.5	0.1	0.1	8.1	219.3	4871.8
FEB 2012	10.8	4.1	16.2	31.1	0.7	0.2	0	7.6	242.0	4877.18
MAR 2012	6.8	1.4	14.9	23.1	2.2	0.3	0.8	16.6	246.4	4878.17
APR 2012	0.6	2.4	12.4	15.4	2.2	1.0	13.2	27.1	232.6	4874.99
MAY 2012	0.3	1.8	19.9	22.0	2.6	3.1	8.1	37.9	214.2	4870.53
JUN 2012	0.3	4.1	13.2	17.6	3.6	3.4	11.0	37.9	190.2	4864.35
JUL 2012	3.0	5.0	12.0	20.0	3.0	2.4	8.7	31.3	175.9	4860.42
AUG 2012	2.1	4.6	9.2	15.9	2.6	1.0	4.9	22.5	166.8	4857.8
SEP 2012	0.3	3.1	9.5	12.9	1.7	0.4	0.6	14.7	163.2	4856.76
Subtotal	53.5	37.7	174.8							
Total				266	21.4	13.6	47.9	248.3		

10. Reservoir Storage Allocation Data

Fryingpan Arkansas Project
 Reservoir Storage Allocation Data
 Unit: Acre-Feet

Reservoir	Dead	Inactive	Active Conservation	Joint Use	Flood Control	Total Capacity Storage
Ruedi	63	1095	101278	0	0	102373 ¹
Turquoise	2810	8920	120478	0	0	129398 ¹
Pueblo	2329	28121	228828	66000	26991	349940 ²
Twin Lakes	63324	72938	67917	0	0	140855
Mt. Elbert Forebay	561	3825	7318	0	0	11143 ¹

¹ Area Capacity Table from 1984

² Area Capacity Table from 1994

Note: Inactive includes dead storage

11. Monthly Evaporation Factors

Fryingpan Arkansas Project
Monthly Evaporation Factors

MONTH	RUEDI	TURQUOISE	TWIN LAKES	PUEBLO
OCT	0.0530	0.1217	0.1217	0.1366
NOV	0	0.0566	0.0566	0.0886
DEC	0	0.0171	0.0171	0.0735
JAN	0	0.0274	0.0274	0.0708
FEB	0	0.0497	0.0497	0.1059
MAR	0	0.1331	0.1331	0.1548
APR	0	0.2006	0.2006	0.1760
MAY	0.1470	0.2554	0.2554	---
JUN	0.3605	0.2246	0.2246	---
JUL	0.3244	0.1766	0.1766	---
AUG	0.2332	0.1663	0.1663	---
SEP	0.1419	0.1217	0.1217	---

Note: These factors are used only when the pan is frozen. Factor divided by number of days in the month multiplied by reservoir area not covered by ice equals daily water surface evaporation in acre-feet.

12. Monthly Evaporation

Fryingpan Arkansas Project
 Monthly Average vs. Current Water Year Evaporation
 Unit=Acre-Feet

MONTH	RUEDI		TURQUOISE		TWIN LAKES		PUEBLO	
	AVG Evap	WY 2012 Evap	AVG Evap	WY 2012 Evap	AVG Evap	WY 2012 Evap	AVG Evap	WY 2012 Evap
OCT	43.27	79.81	357.62	337.89	514.18	462.92	1017.95	1452.44
NOV	0	0	161.65	167.60	230.2	219.09	510.50	573.10
DEC	0	0	13.53	23.22	24.13	36.42	431.19	515.21
JAN	0.31	0	0.16	2.52	0.93	5.38	395.76	477.41
FEB	0	0	0	0	1.77	7.70	577.85	528.73
MAR	0	0	0.03	0	24.65	20.72	1225.35	1901.30
APR	8.93	0	14.45	0	185.09	135.70	1659.38	2516.06
MAY	142.20	0	305.38	31.93	882.73	673.59	2141.97	2741.96
JUN	418.53	549.03	726.88	728.24	1209.62	1235.83	2528.96	3664.34
JUL	484.64	578.39	616.94	650.73	1007.84	1099.15	2396.87	3171.94
AUG	271.14	413.80	474.96	599.55	774.32	897.05	1917.25	2812.24
SEP	154.58	234.68	428.26	457.26	716.00	749.79	1536.87	1820.93

Yearly averages include year's 1996-2011.

13. Monthly Precipitation

Fryingpan Arkansas Project
 Monthly Average vs. Current Water Year Precipitation
 Unit=Inches

MONTH	RUEDI		TURQUOISE		TWIN LAKES		PUEBLO		ROCKY FORD	
	AVG Precip	WY 2012 Precip	AVG Precip	WY 2012 Precip	AVG Precip	WY 2012 Precip	AVG Precip	WY 2012 Precip	AVG Precip	WY 2012 Precip
OCT	2.17	1.52	0.91	2.19	0.91	1.23	0.34	1.53	0.28	0.21
NOV	2.45	1.55	0.76	0.99	0.76	0.09	0.32	0.13	0.34	0.60
DEC	2.13	0.52	0.75	0.37	0.75	0.17	0.92	0.86	0.88	0.32
JAN	1.70	1.90	0.62	1.19	0.62	0.41	1.47	0.02	1.28	0.00
FEB	2.30	2.07	0.73	1.47	0.73	0.63	1.66	0.72	1.64	0.08
MAR	2.66	0.93	0.94	0.23	0.94	0.05	1.39	0.03	1.53	0.22
APR	2.57	1.70	1.07	0.87	1.07	0.30	2.01	1.03	2.04	1.73
MAY	2.10	1.02	0.80	0.64	0.80	0.57	2.41	0.93	1.89	0.75
JUN	1.31	0.36	0.94	0.16	0.94	0.56	0.85	0.14	0.87	0.09
JUL	1.91	3.32	1.85	3.28	1.85	2.34	0.73	1.86	0.90	1.05
AUG	1.67	1.85	2.03	3.39	2.03	2.42	0.57	0.31	0.42	0.15
SEP	2.05	1.01	1.08	2.05	1.08	1.43	0.37	0.88	0.36	1.15
TOTAL	25.02	17.58	12.48	16.81	12.48	10.12	13.04	8.44	11.92	6.35
Max. Annual	26.70	(1984)	25.95	(1957)	17.27	(1952)	20.32	(2007)	22.75	(1999)

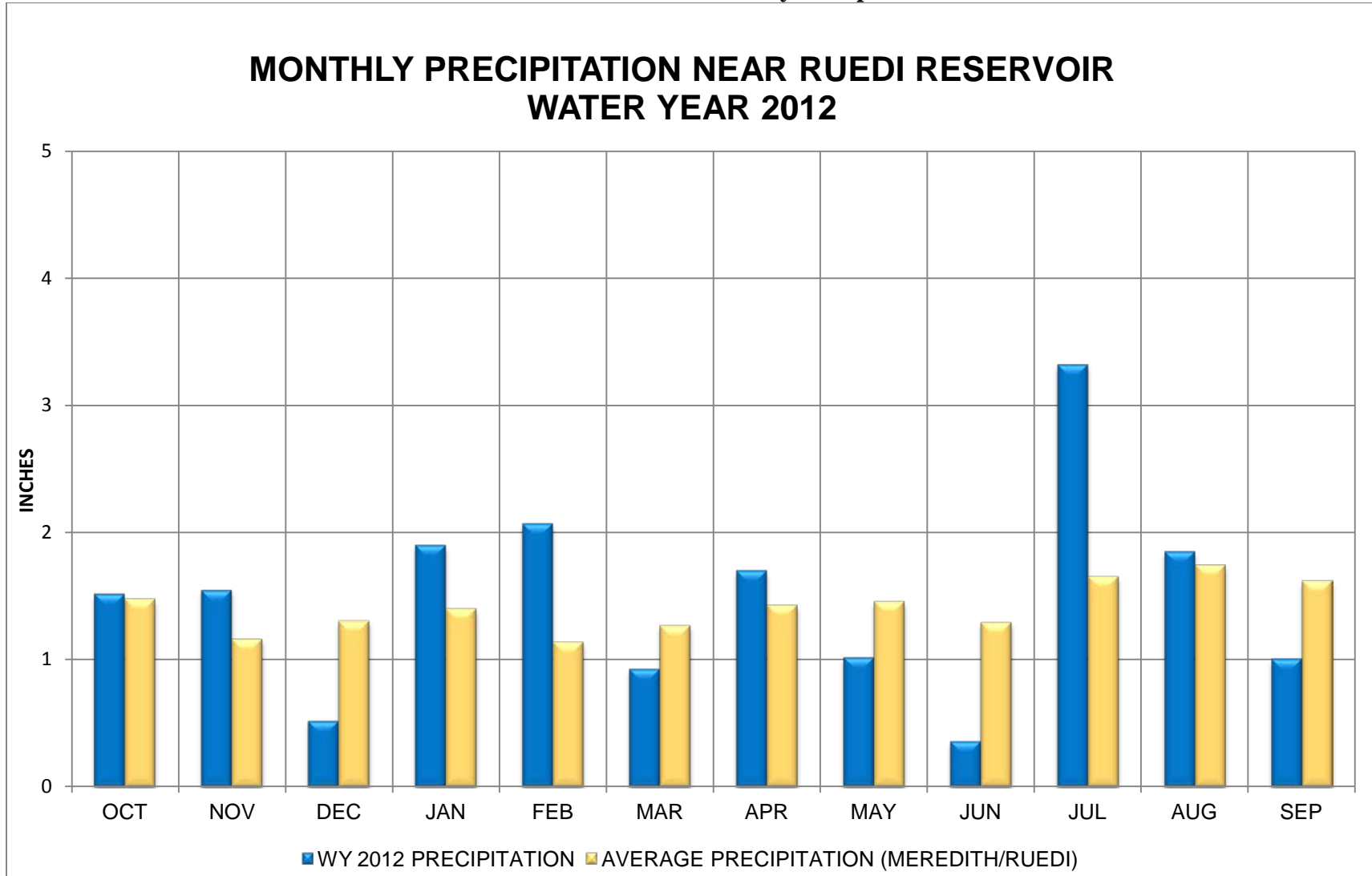
14. Flood Control Benefits

Fryingpan-Arkansas Project
Flood Control Benefits in Dollars

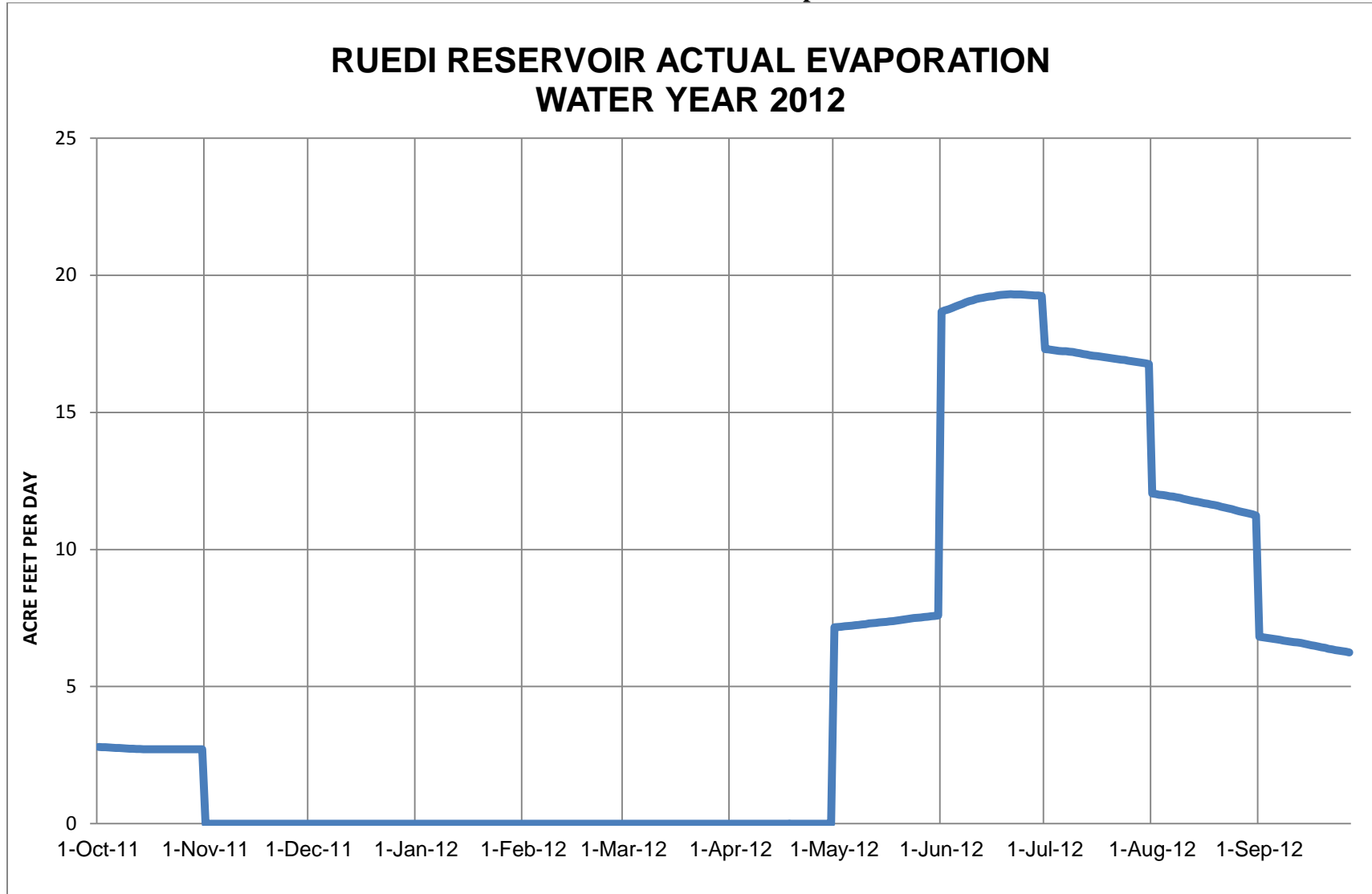
	Ruedi Benefits WY 2012	Ruedi Benefits Cumulative	Pueblo Benefits WY 2012	Pueblo Benefits Cumulative
1976			320,000	320,000
1979			90,000	410,000
1980			86,000	496,000
1981			111,000	607,000
1982			836,000	1,443,000
1983	80,000	80,000	47,000	1,490,000
1984	330,000	410,000	1,039,000	2,529,000
1985	91,000	501,000	234,000	2,763,000
1986	70,000	571,000	0	2,763,000
1987	0	571,000	90,000	2,853,000
1988	0	571,000	0	2,853,000
1989	0	571,000	0	2,853,000
1990	0	571,000	0	2,853,000
1991	0	571,000	482,000	3,335,000
1992	0	571,000	266,000	3,601,000
1993	4,000	575,000	496,000	4,097,000
1994	280,000	855,000	290,000	4,387,000
1995	1,770,000	2,625,000	832,000	5,219,000
1996	1,550,000	4,175,000	0	5,219,000
1997	1,207,000	5,382,000	320,200	6,539,200
1998	0	5,382,000	0	6,539,200
1999	116,000	5,498,000	4,778,000	11,317,200
2000	1,061,000	6,559,000	0	11,317,200
2001	0	6,559,000	0	11,317,200
2002	0	6,559,000	0	11,317,200
2003	1,515,100	8,074,100	0	11,317,200
2004	0	8,074,100	0	11,317,200
2005	970,200	9,044,300	0	11,317,200
2006	799,000	9,843,300	20,159,000	31,476,200
2007	103,000	9,946,300	0	31,476,200
2008	1,635,000	11,581,300	0	31,476,200
2009	740,100	12,321,400	0	31,476,200
2010	2,993,000	15,314,400	0	31,476,200
2011	3,002,000	18,316,400	0	31,476,200
2012	0	18,316,400	0	31,476,200

APPENDIX B: EXHIBITS

1. Ruedi Reservoir Monthly Precipitation

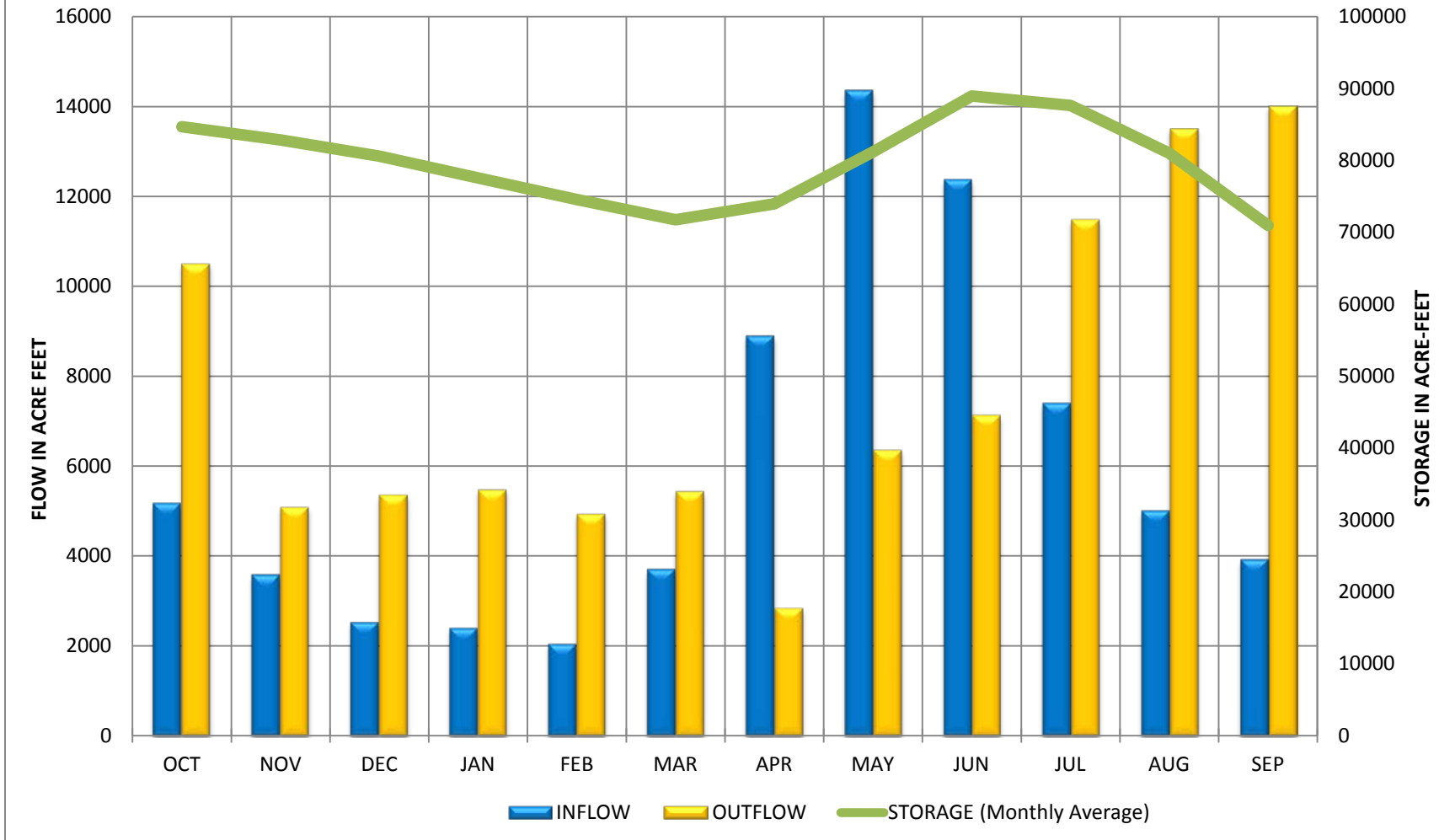


2. Ruedi Reservoir Evaporation

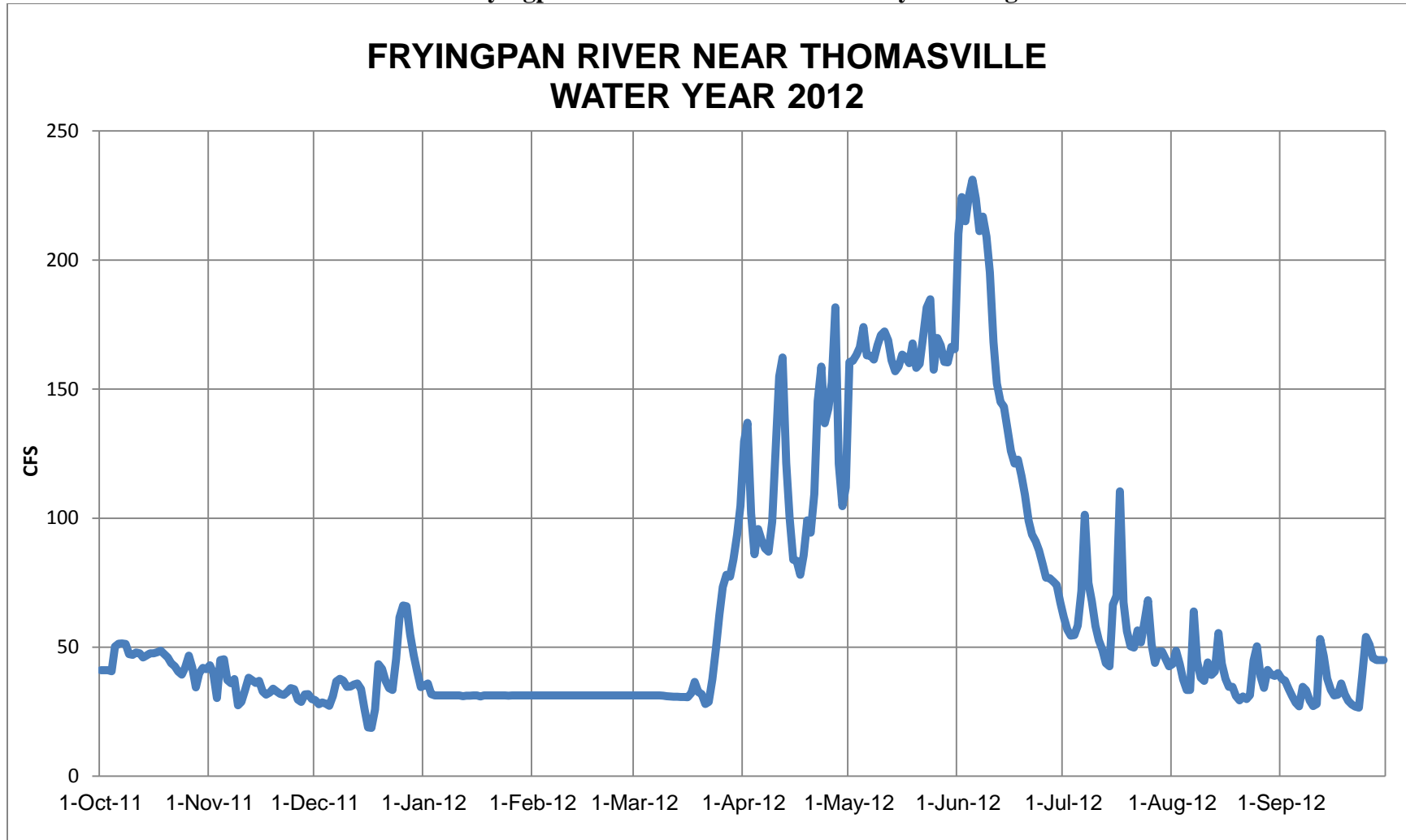


3. Ruedi Reservoir Actual Operations

**RUEDI RESERVOIR
WATER YEAR 2012 ACTUAL OPERATIONS**

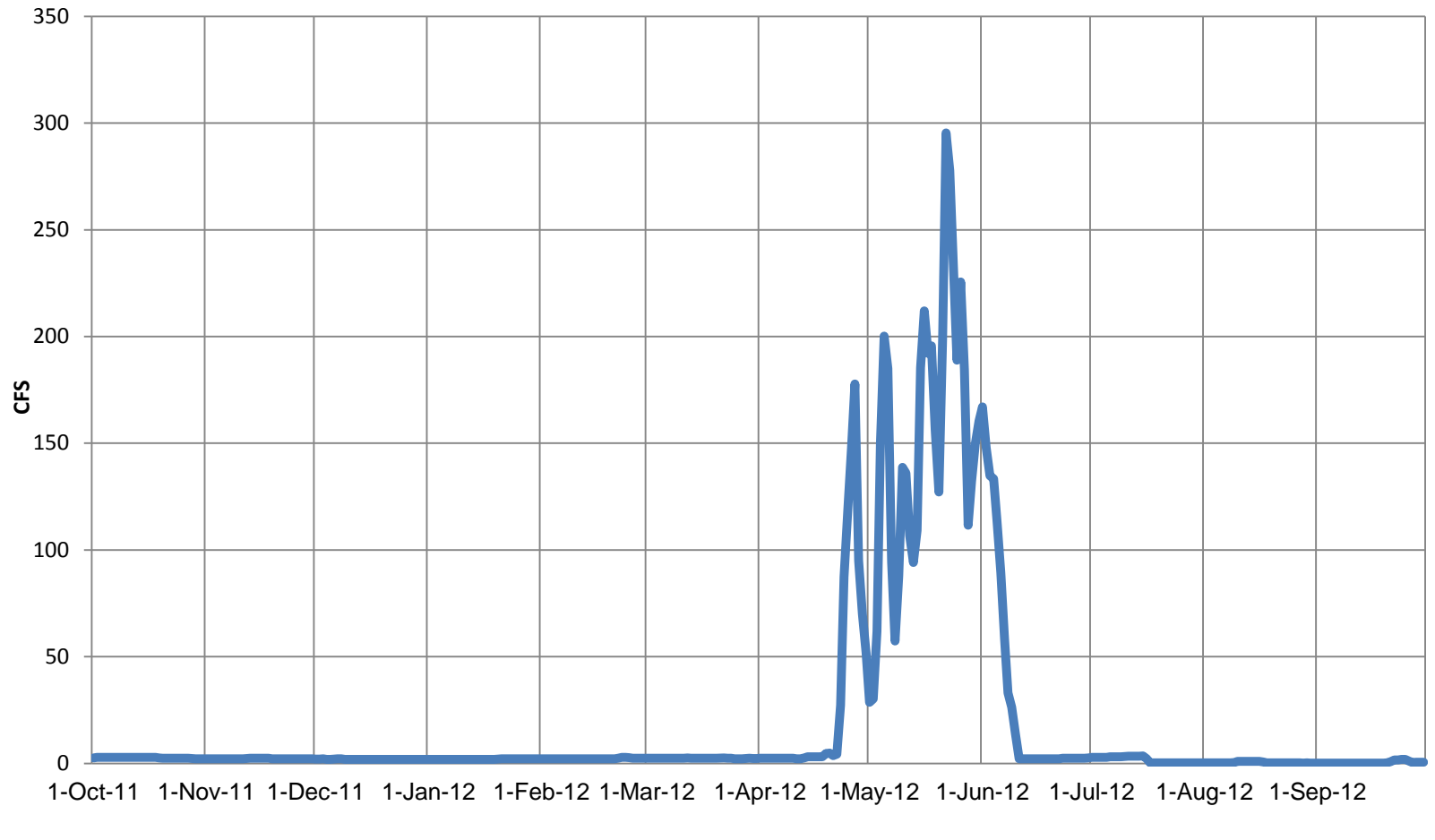


4. Fryingspan River near Thomasville Daily Discharge



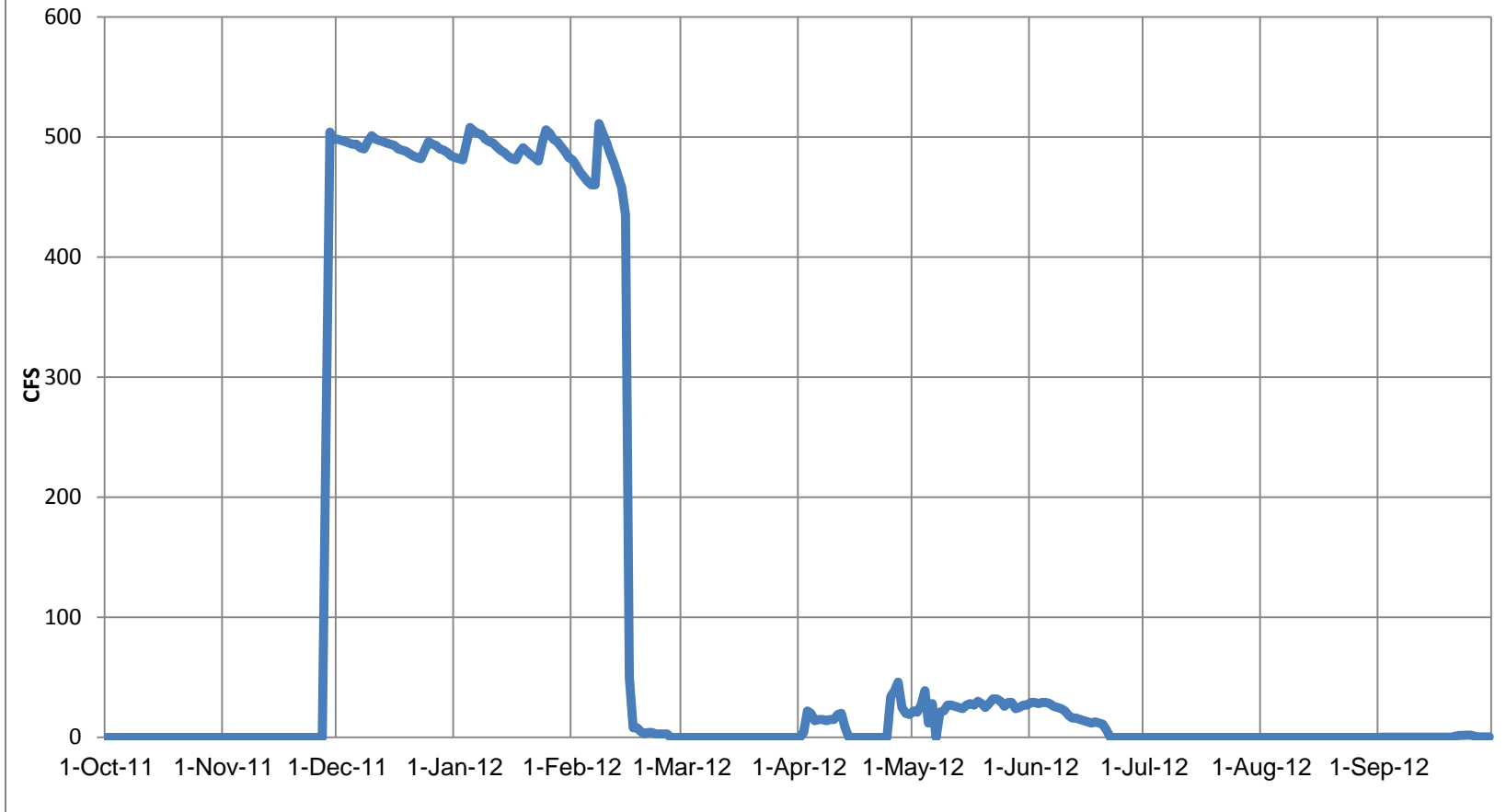
5. Boustead Tunnel Actual Operations

**BOUSTEAD TUNNEL IMPORTS
WATER YEAR 2012**



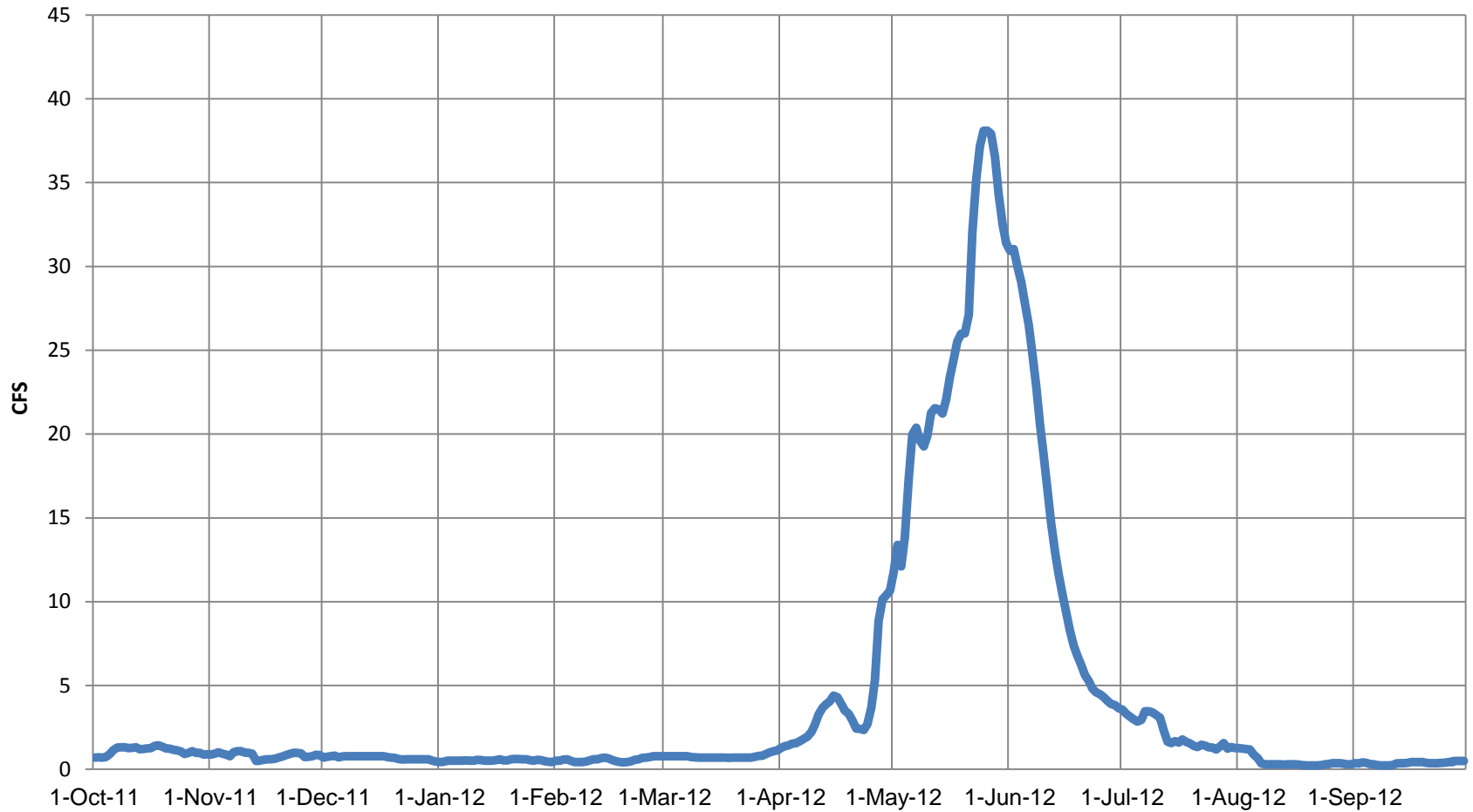
6. Homestake Tunnel Actual Operations

**HOMESTAKE TUNNEL IMPORTS
WATER YEAR 2012**

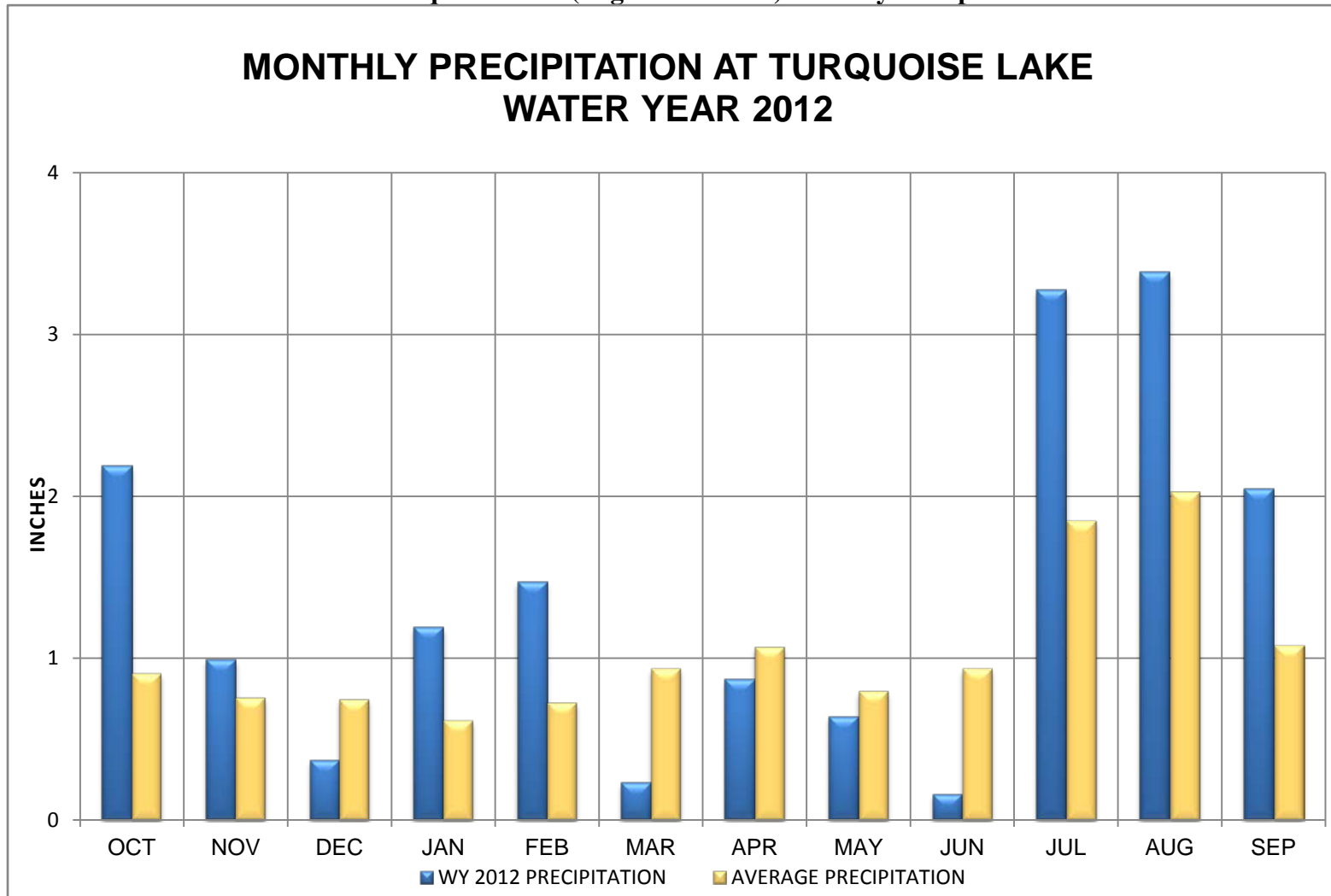


7. Busk-Ivanhoe Tunnel Actual Operations

**BUSK IVANHOE TUNNEL IMPORTS
WATER YEAR 2012**

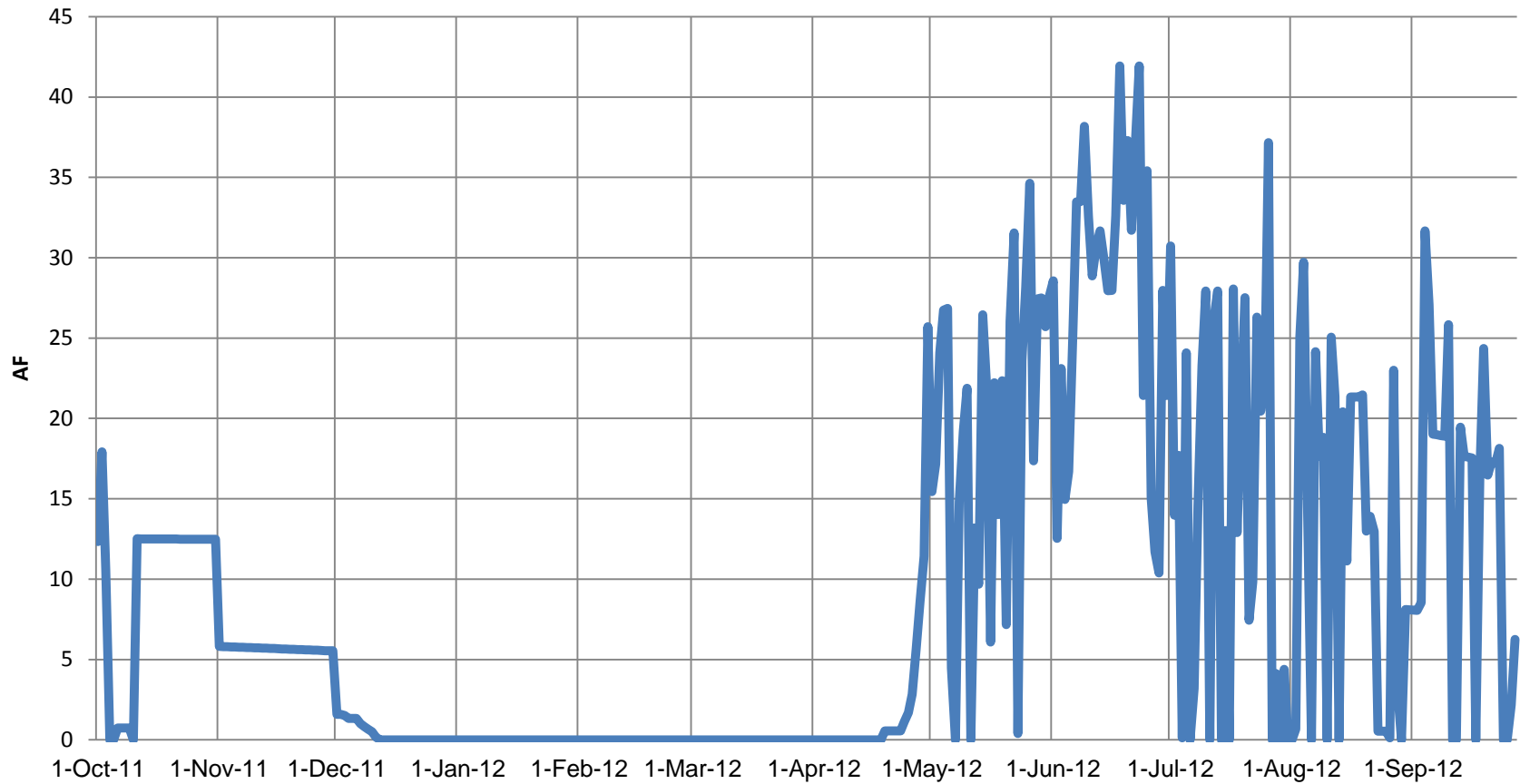


8. **Turquoise Lake (Sugar Loaf Dam) Monthly Precipitation**



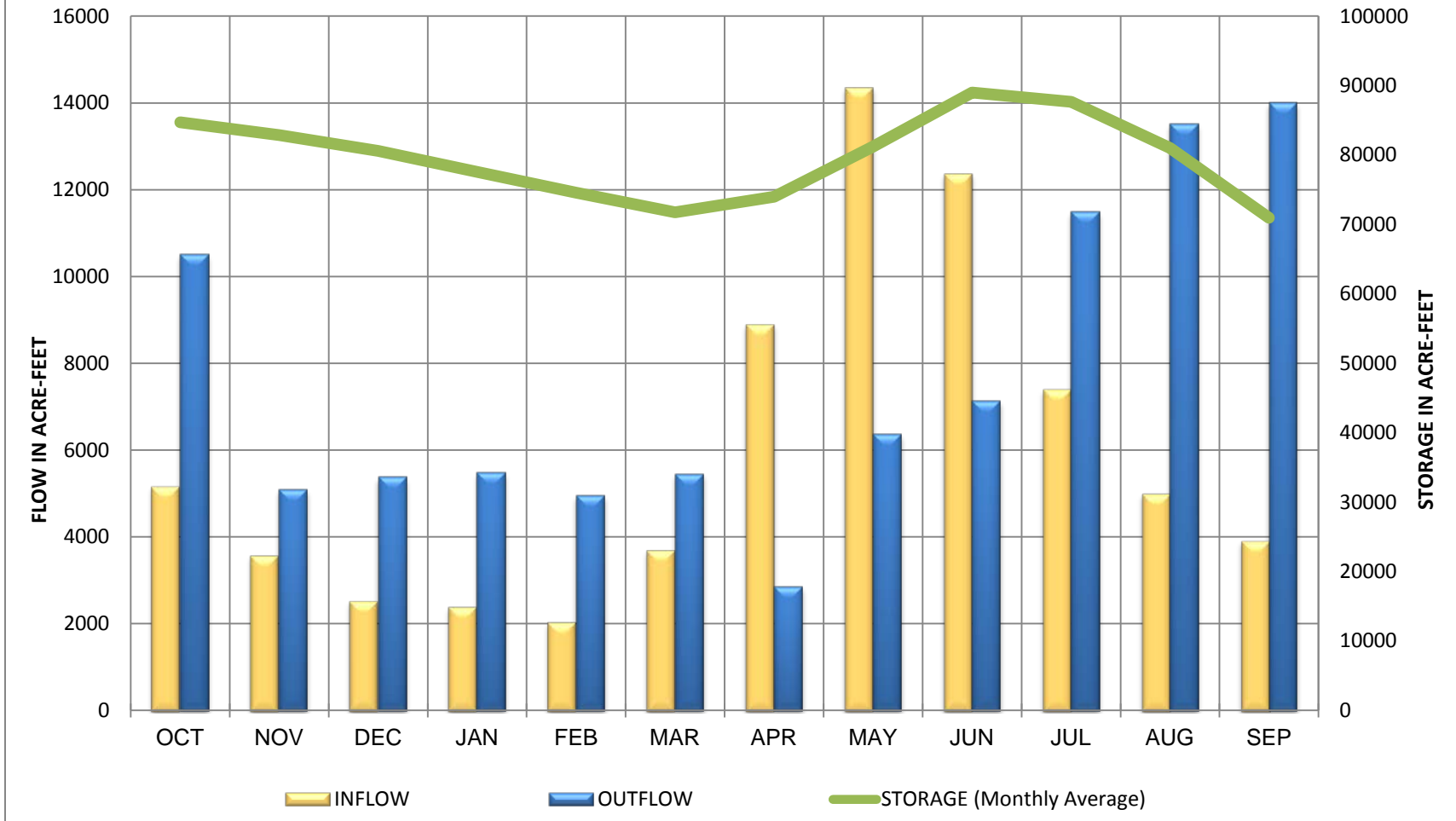
9. Turquoise Lake (Sugar Loaf Dam) Evaporation

TURQUOISE LAKE ACTUAL EVAPORATION WATER YEAR 2012



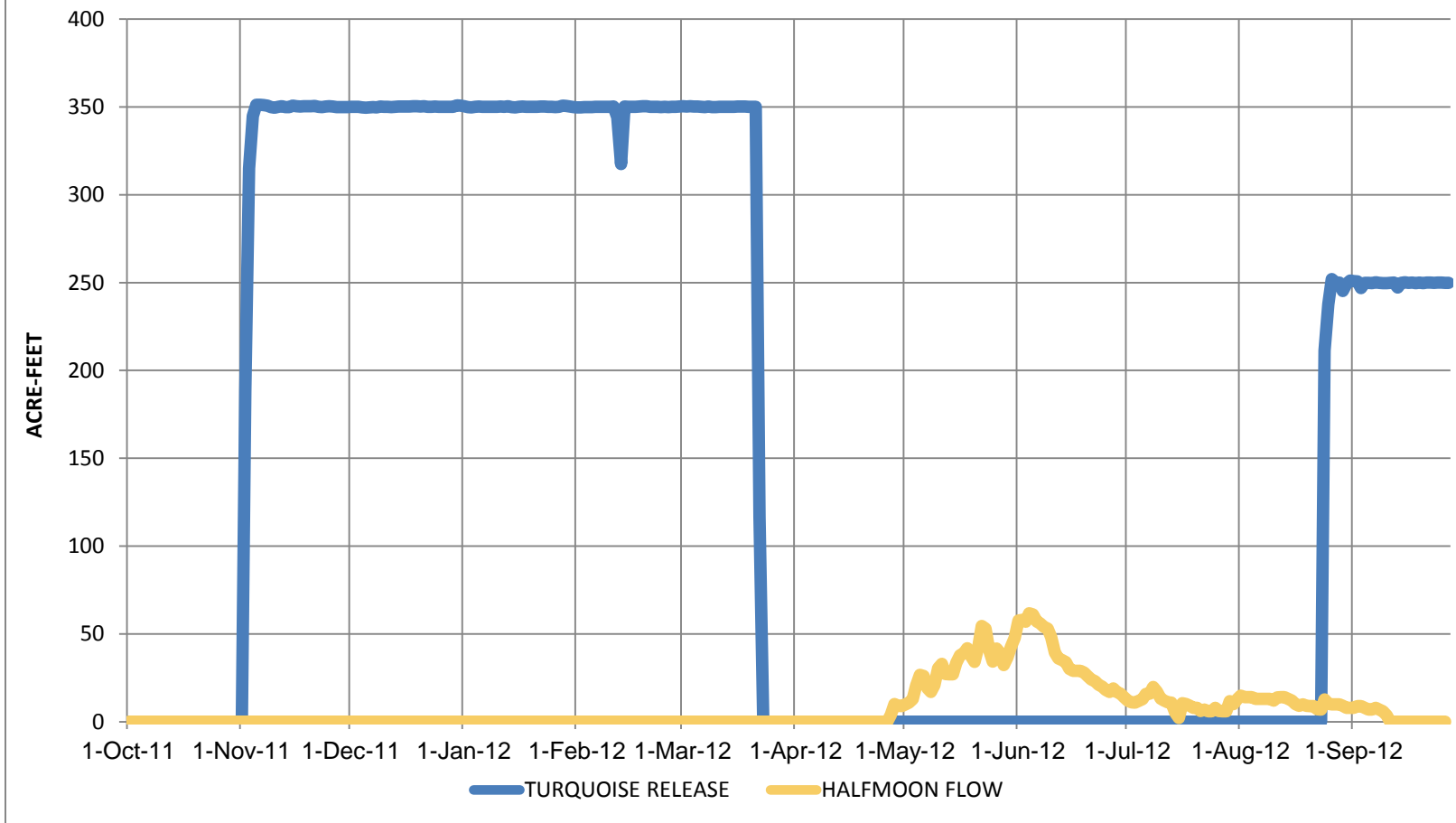
10. Turquoise Lake (Sugarloaf Dam) Actual Operations

**TURQUOISE LAKE
WATER YEAR 2012 ACTUAL OPERATIONS**

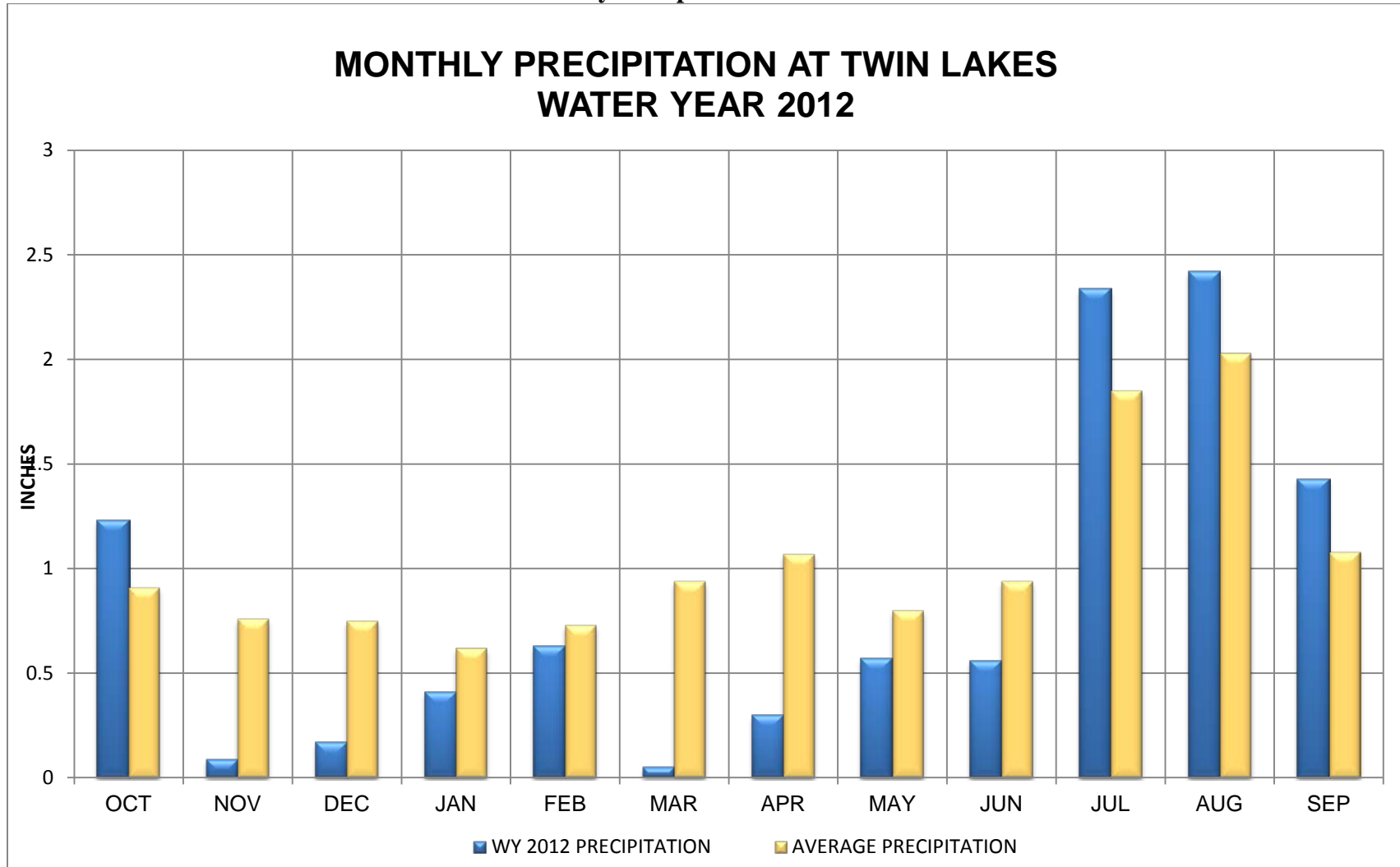


11. Mt. Elbert Conduit Inflow Actual Operations

MT. ELBERT CONDUIT FLOW WATER YEAR 2012 ACTUAL OPERATIONS

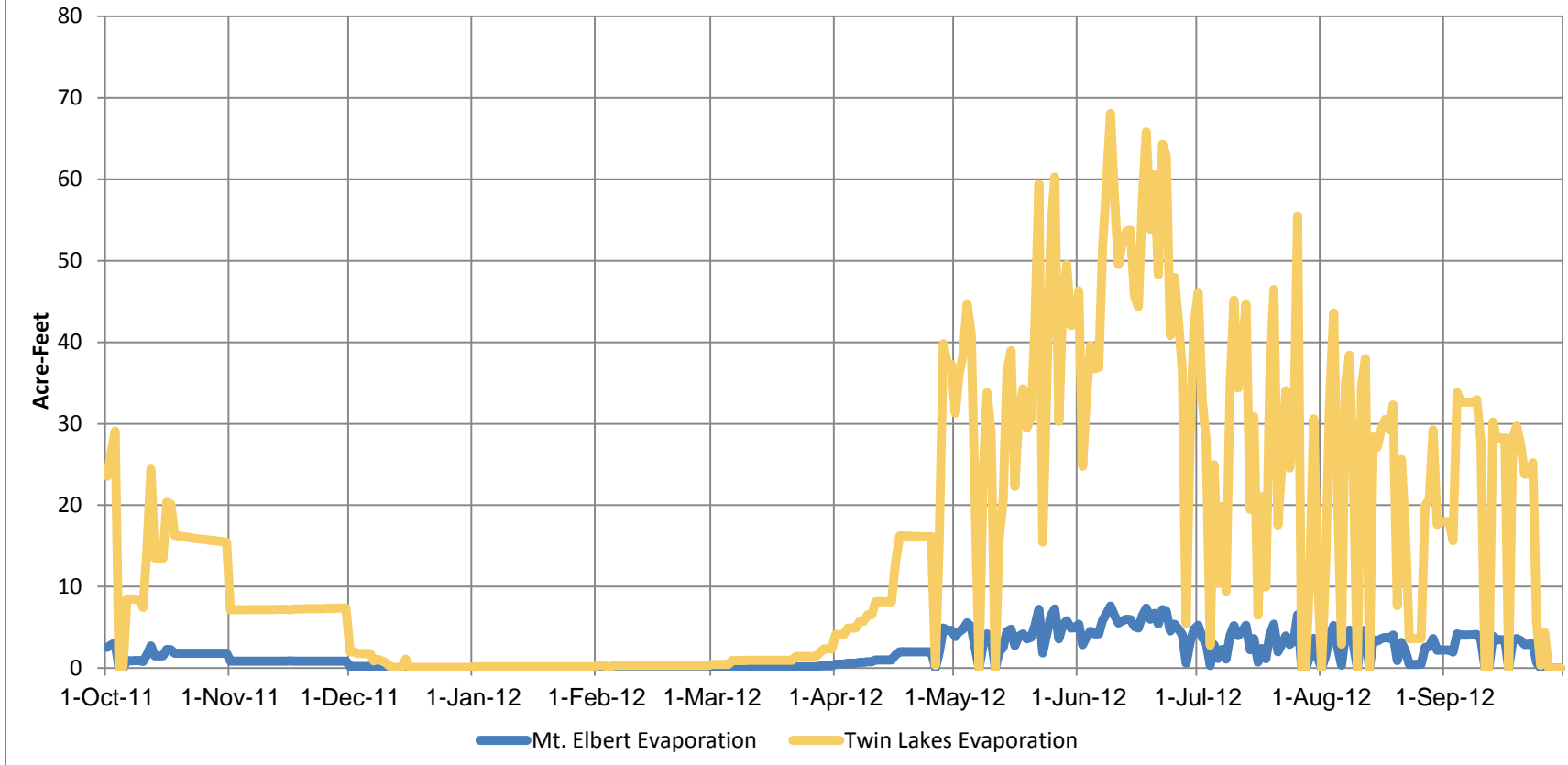


12. Monthly Precipitation at Twin Lakes Dam

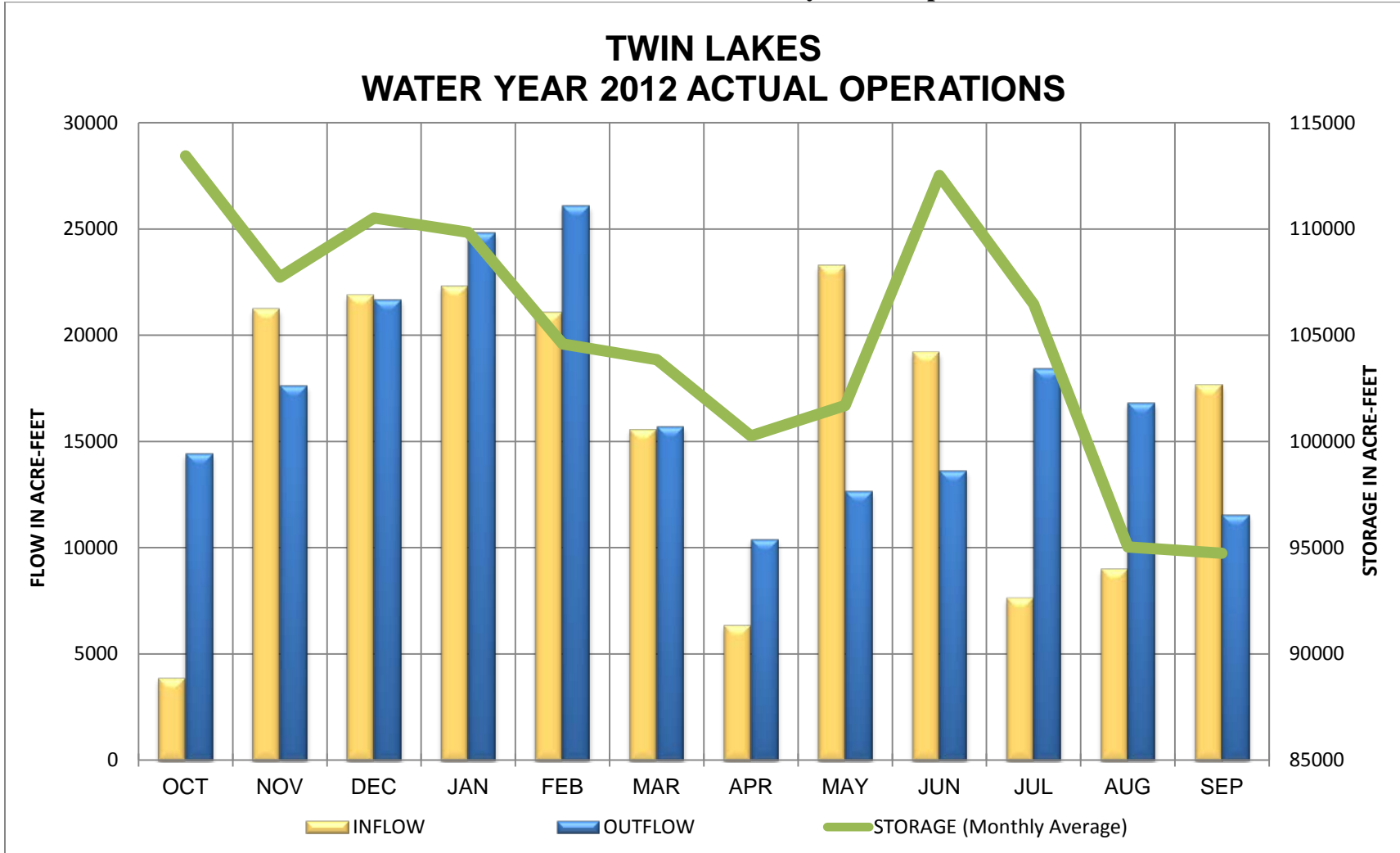


13. Monthly Evaporation at Twin Lakes Dam and Mt. Elbert Forebay

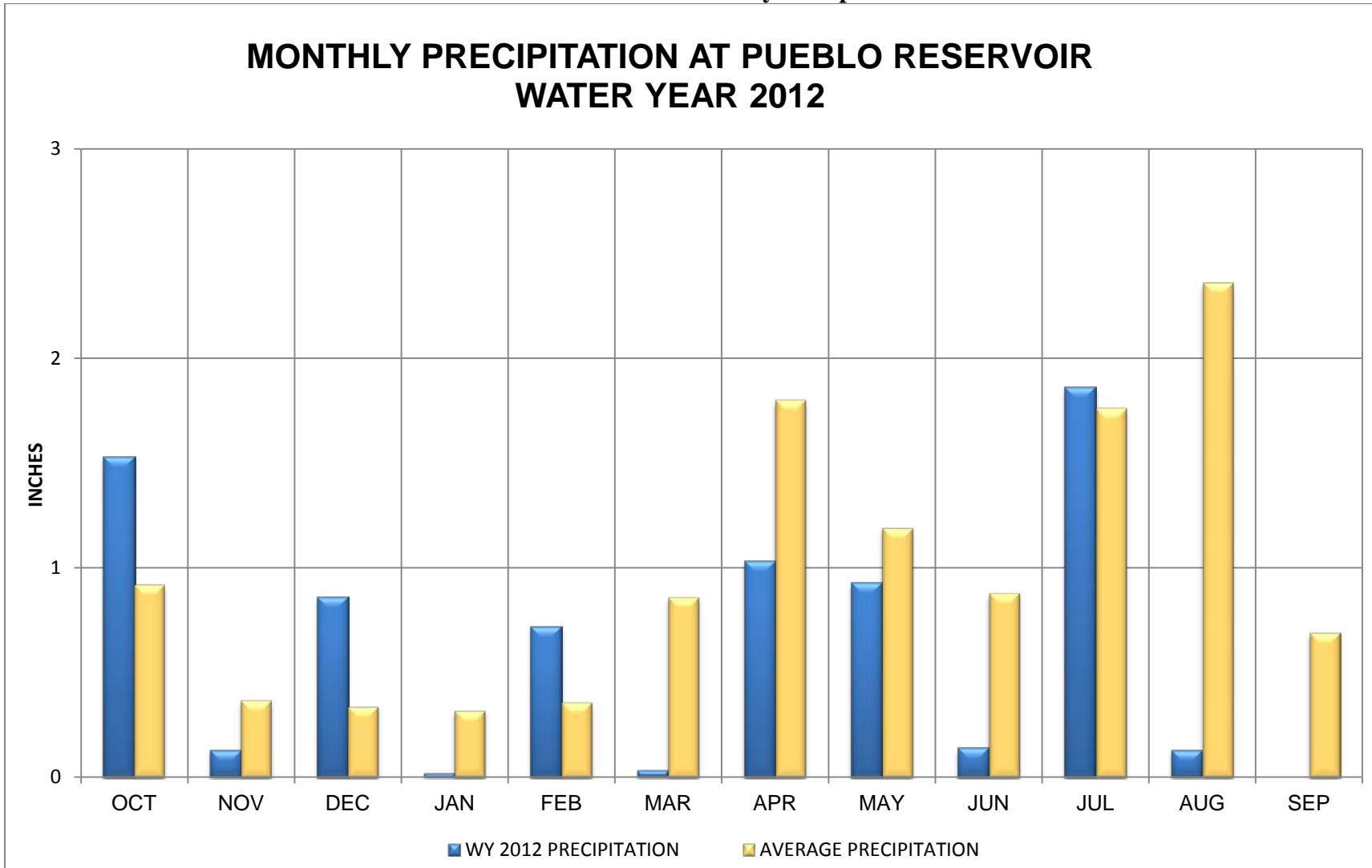
**MONTHLY EVAPORATION AT TWIN LAKES DAM
AND MT. ELBERT FOREBAY
WATER YEAR 2012**



14. Twin Lakes/Mt. Elbert Forebay Actual Operations

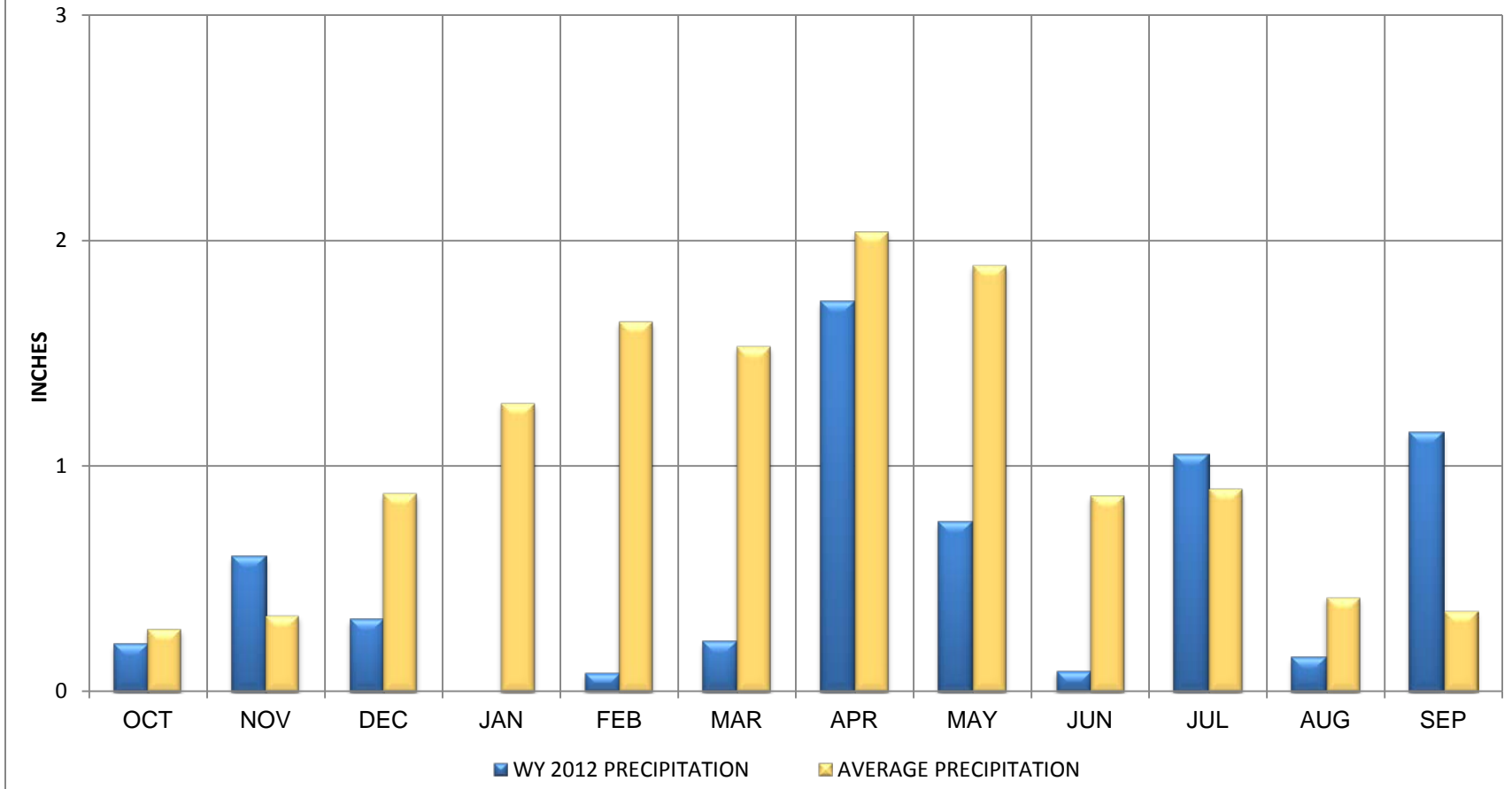


15. Pueblo Dam Monthly Precipitation

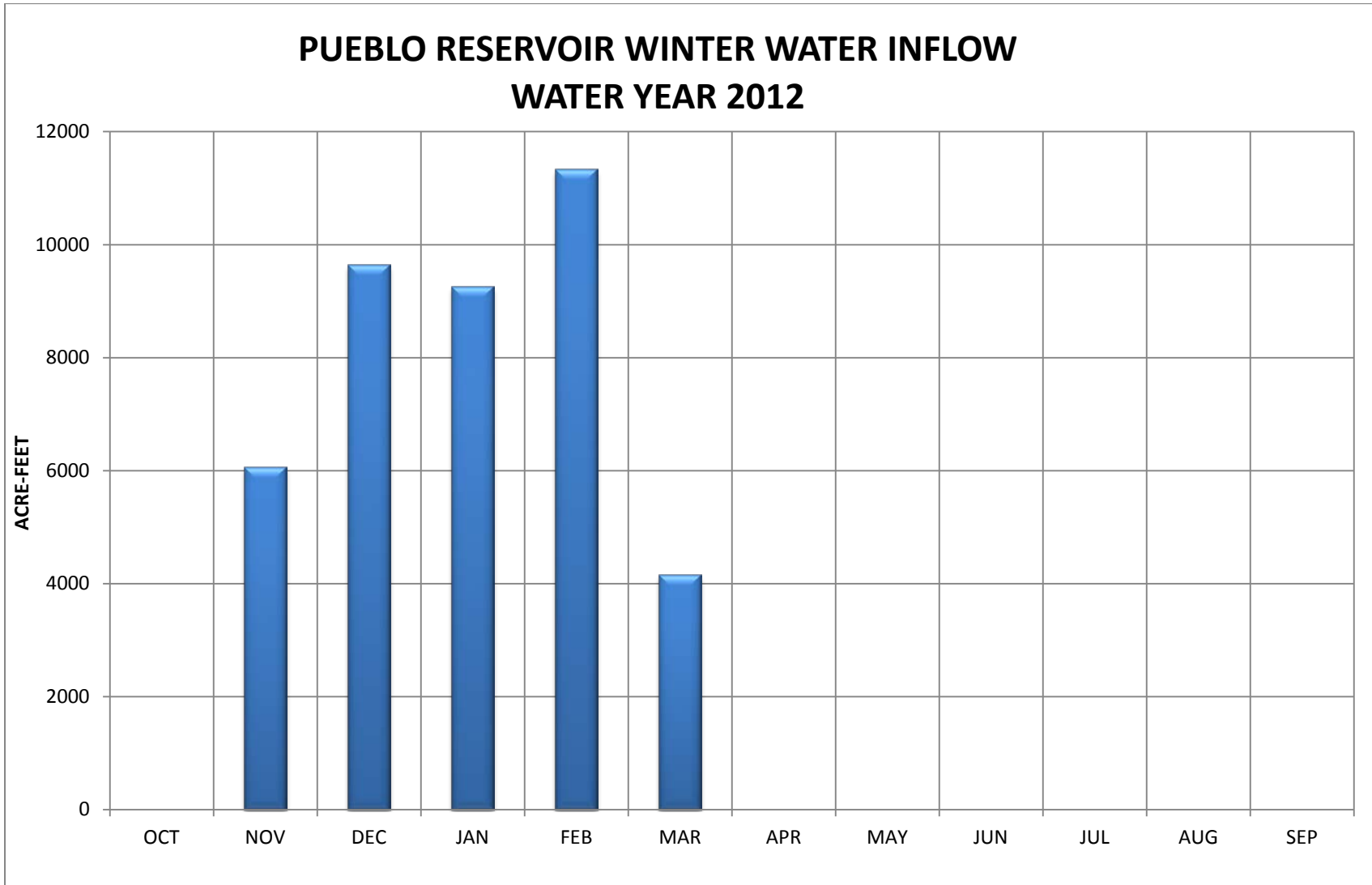


16. Rocky Ford, Colorado Monthly Precipitation

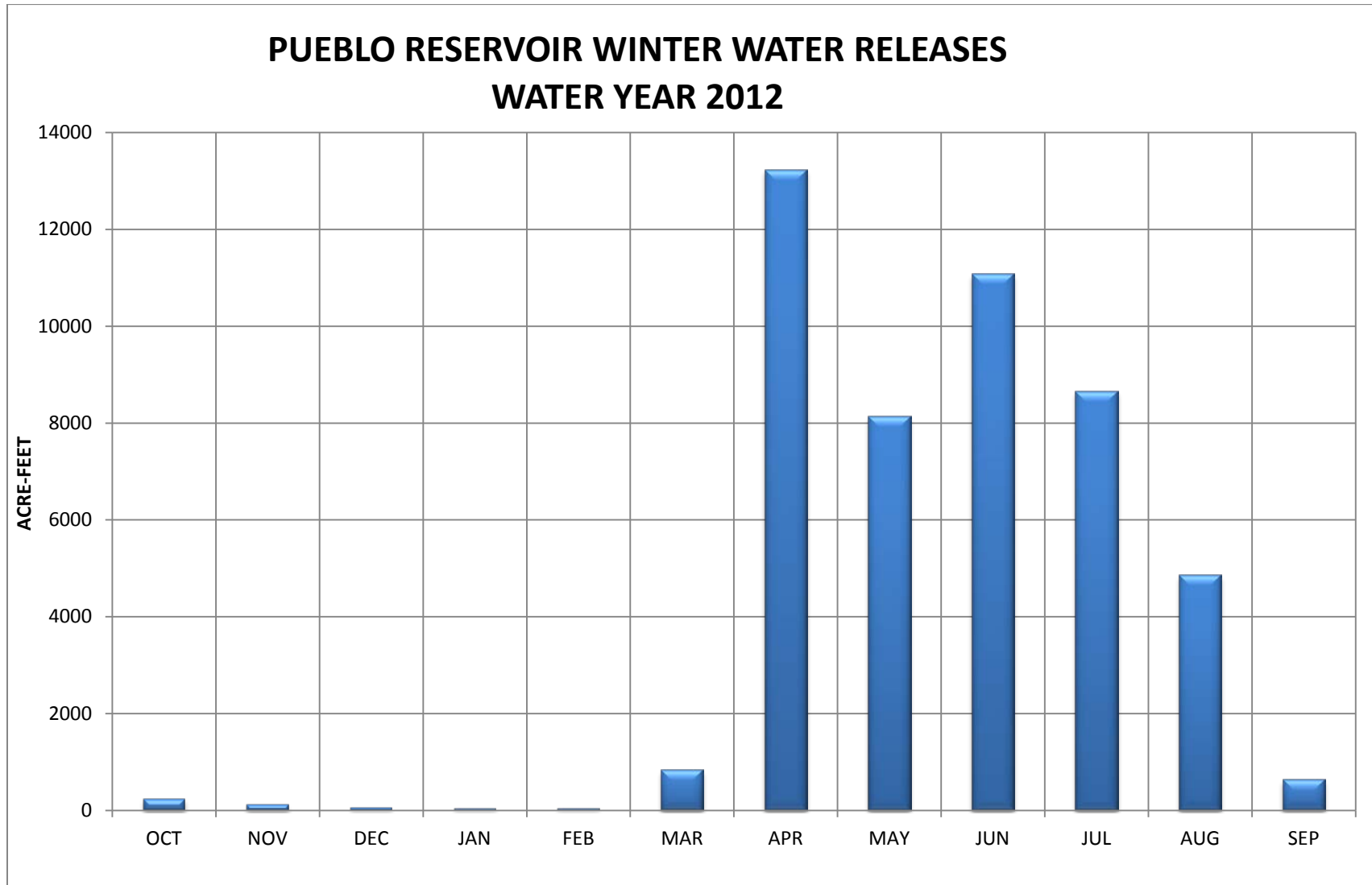
**MONTHLY PRECIPITATION AT ROCKY FORD
WATER YEAR 2012**



17. Pueblo Reservoir Winter Water Inflow

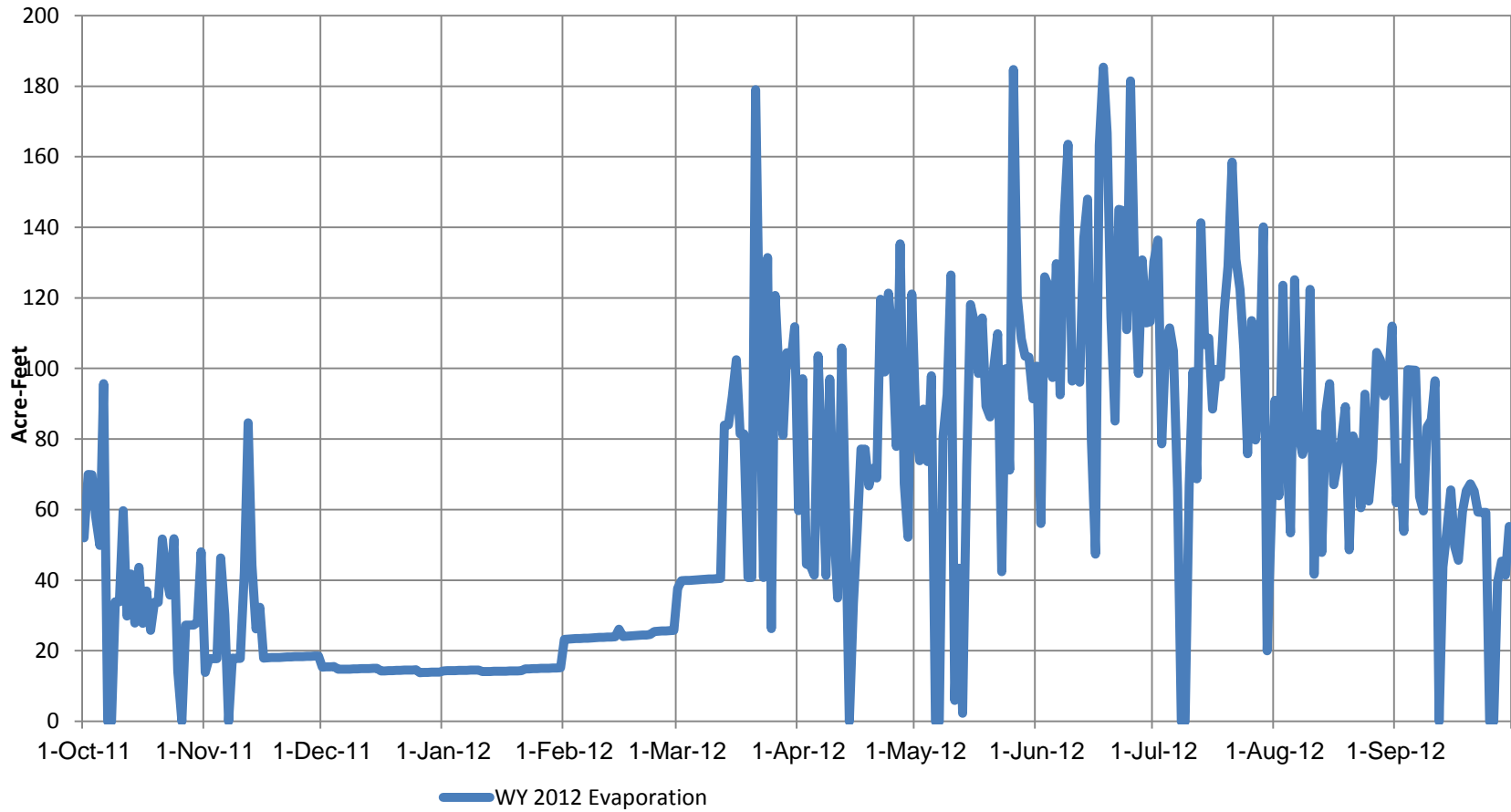


18. Releases of Pueblo Reservoir Winter Water



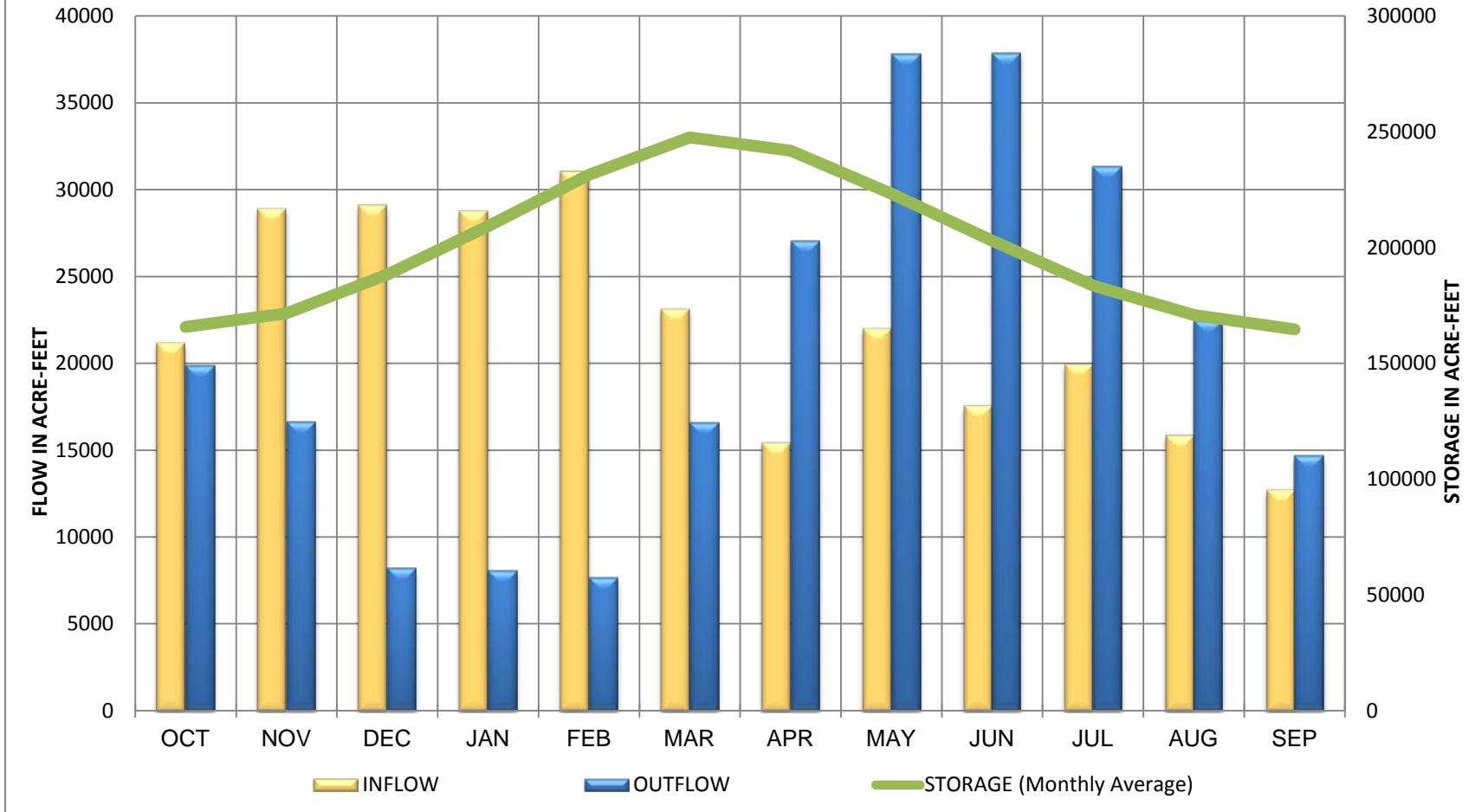
19. Pueblo Dam Monthly Evaporation

MONTHLY EVAPORATION AT PUEBLO DAM
WATER YEAR 2012

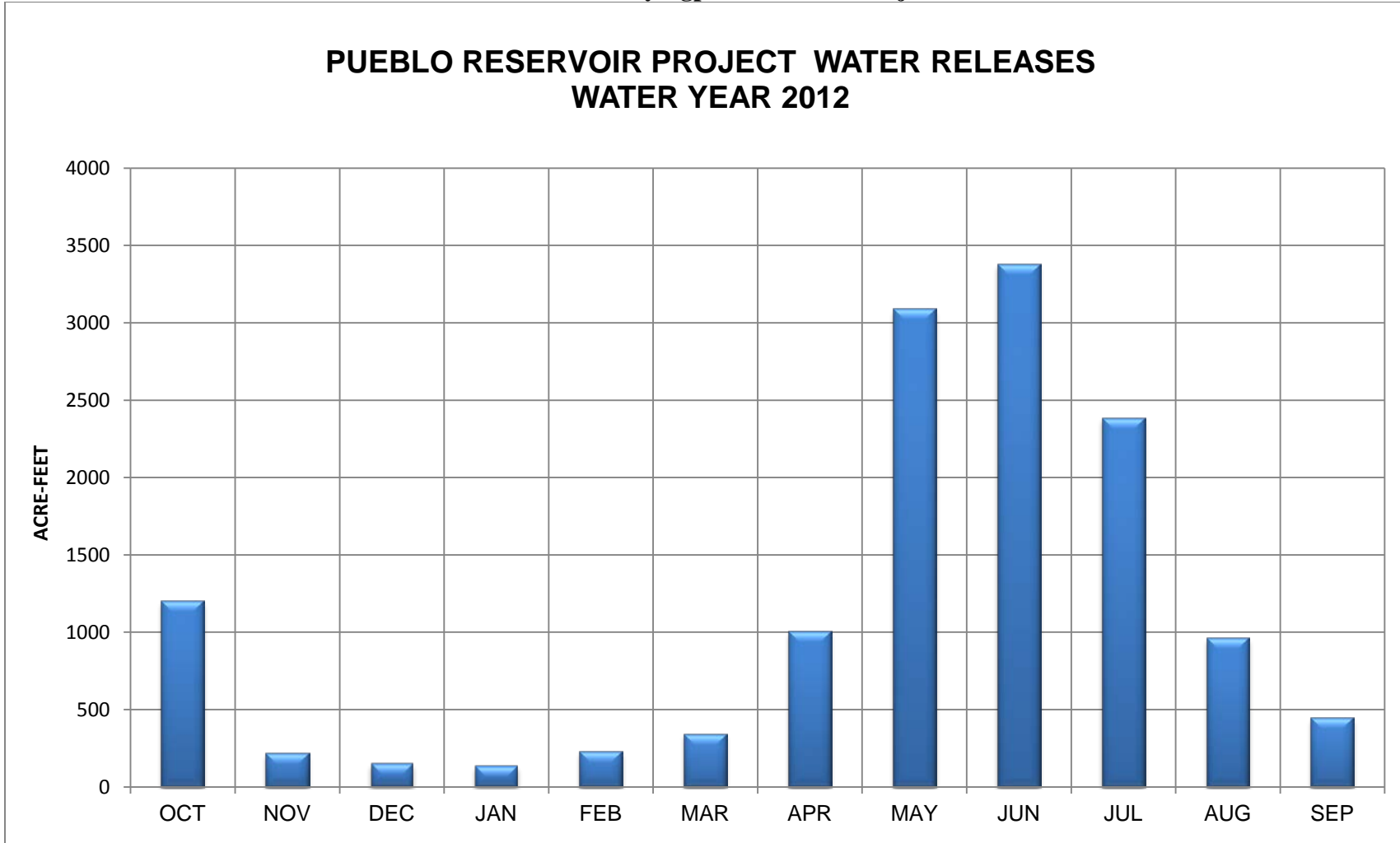


20. Pueblo Reservoir Actual Operations

**PUEBLO RESERVOIR
WATER YEAR 2012 ACTUAL OPERATIONS**



21. Releases of Fryingpan-Arkansas Project Water



APPENDIX C: TWIN LAKES RESERVOIR AND CANAL COMPANY
EXCHANGE WITH FRYINGPAN-ARKANSAS PROJECT WATER

Twin Lakes Canal Company Exchange with Fryingpan Arkansas Project Water
 Water Year 2012
 Units = Acre-Feet

	Lincoln Creek below Grizzly Reservoir (1)	Roaring Fork River above Lost Man Creek (2)	Total (1 + 2) (3)	Twin Lakes Storage (3) x 0.9913 ¹ (4)
October	181	0	181	179
November	173	0	173	171
December	181	0	181	179
January	184	0	184	183
February	168	0	168	167
March	179	0	179	177
April	164	0	164	163
May	228	28	256	254
June	240	95	335	0
July	0	0	0	0
August	0	0	0	0
September	0	0	0	0
Total	1,698	122	1,793	1,777

¹ .87% transit loss from the outlet of Twin Lakes Tunnel to Twin Lakes normally taken on all Twin Lakes Reservoir and Canal Company imported water.

Operating Criteria

1. The water exchange will be implemented October 1 through September 30.
2. The releases to the Roaring Fork River at the Roaring Fork Diversion Dam and Lincoln Creek at the Grizzly Diversion Dam shall be accounted as follows¹:

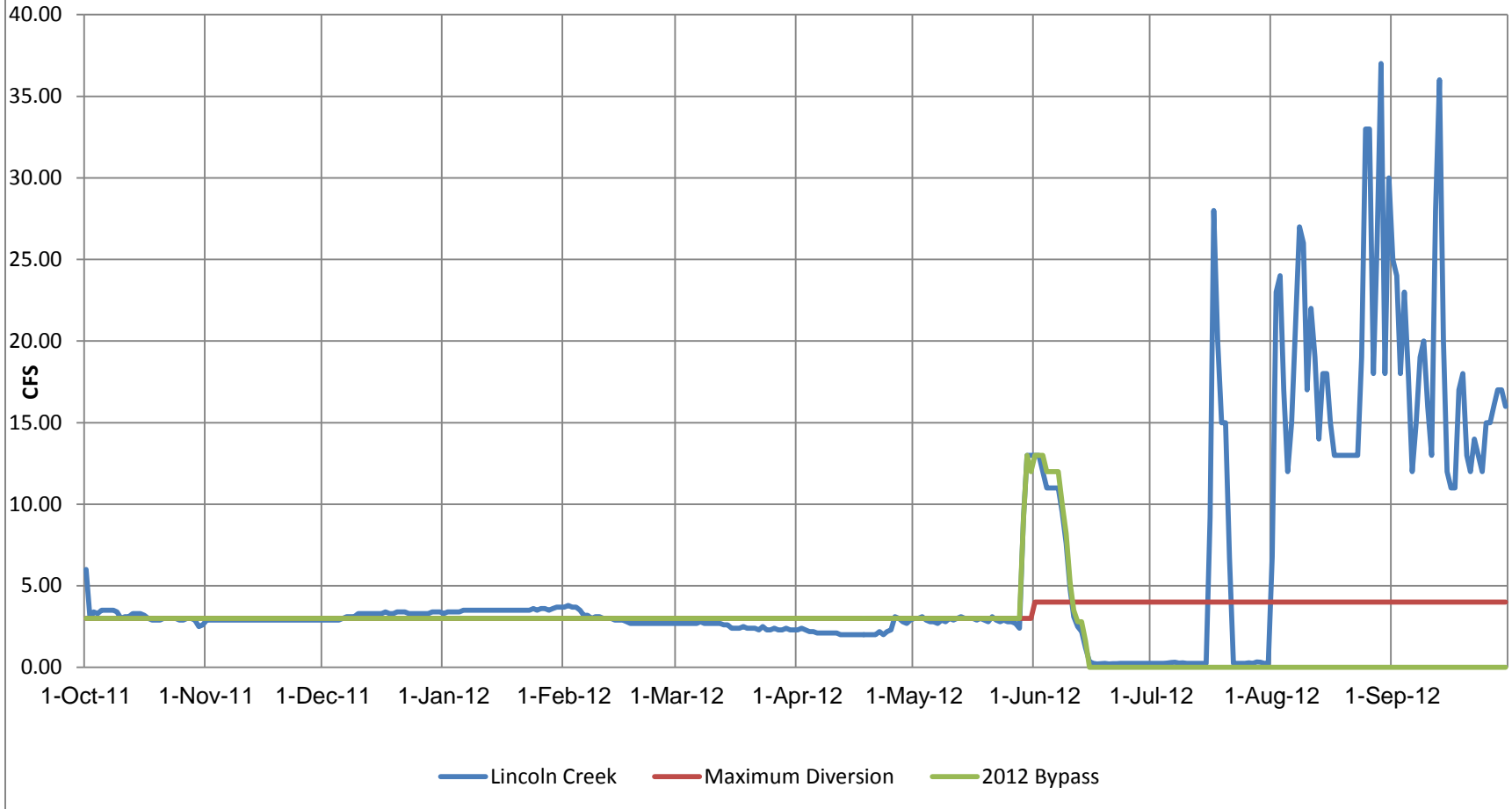
<u>Month</u>	<u>Grizzly Diversion(ft³/s)</u>	<u>Roaring Fork Diversion(ft³/s)</u>
October	3.0	0.0
November	3.0	0.0
December	3.0	0.0
January	3.0	0.0
February	3.0	0.0
March	3.0	0.0
April	3.0	0.0
May*	3.0	0.0
June*	4.0	4.0
July*	4.0	4.0
August*	4.0	3.0
September*	4.0	3.0

*Operating criteria for WY 2012 were revised at a Twin Lakes Exchange stakeholders meeting in Buena Vista, CO on 25 May 2012. Bypass amounts in May and June varied from the fixed diversions as shown on the following charts for the Lincoln Creek below Grizzly Dam and Roaring Fork above Lost Man gages.

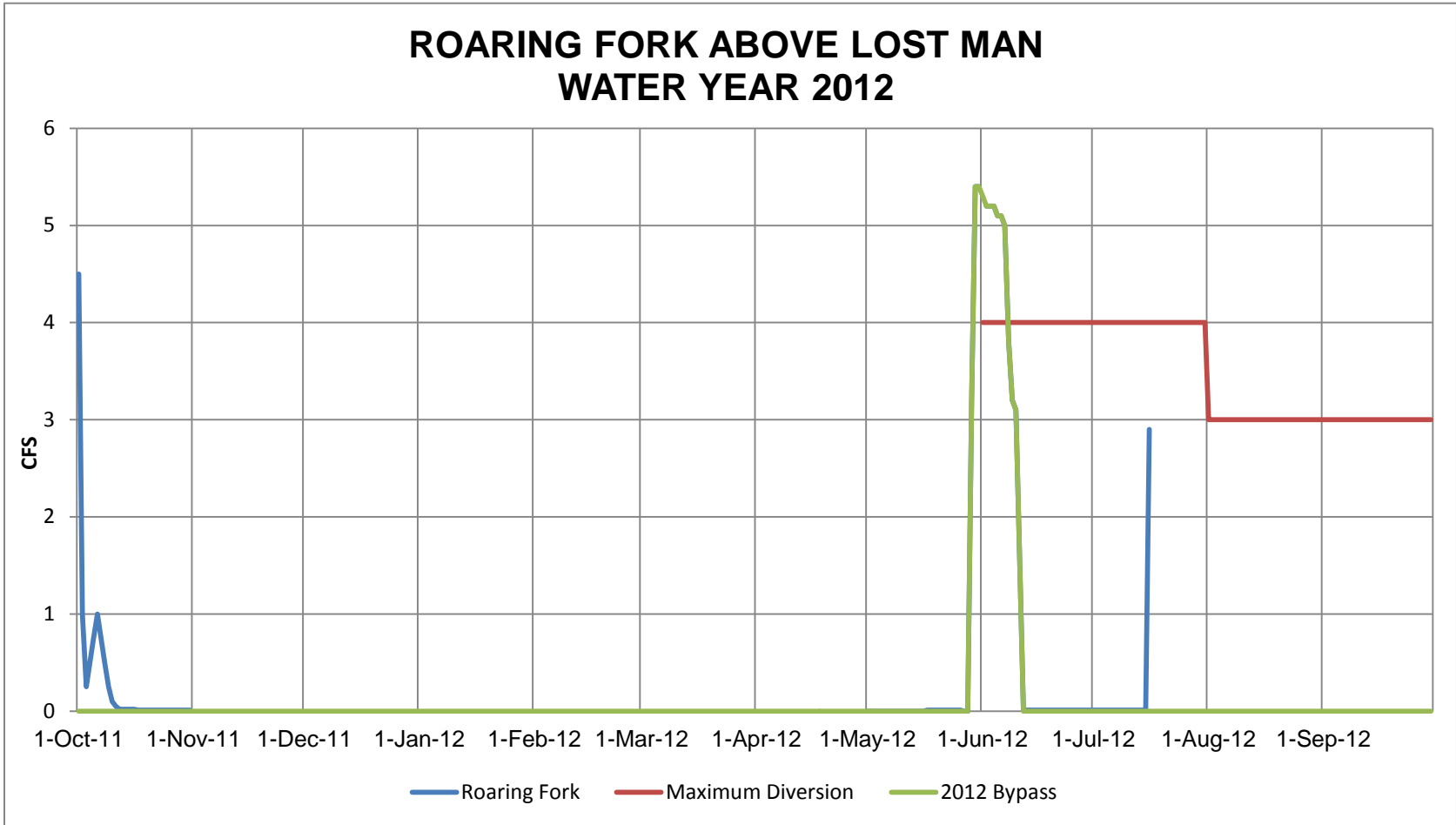
3. At any time the Twin Lakes Reservoir and Canal Company (Company) is bypassing water, in addition to that designated above, it will be assumed that the Company could not have diverted that water and will not receive any credit for exchange in excess of the above amounts.
4. In the event less water than the above amounts is bypassed, only the amount actually bypassed will be credited.
5. The total volume of the release at both gages combined shall not exceed 3,000 acre-feet in any one water year.
6. No credit for exchange will be made on days when there is no documentation of such bypasses.
7. No credit will be given for water bypassed when diversions are called out by the State Engineer. In WY 2012, the Cameo call on the Colorado River was in effect from 21 June through 30 September.

Lincoln Creek Below Grizzly Reservoir

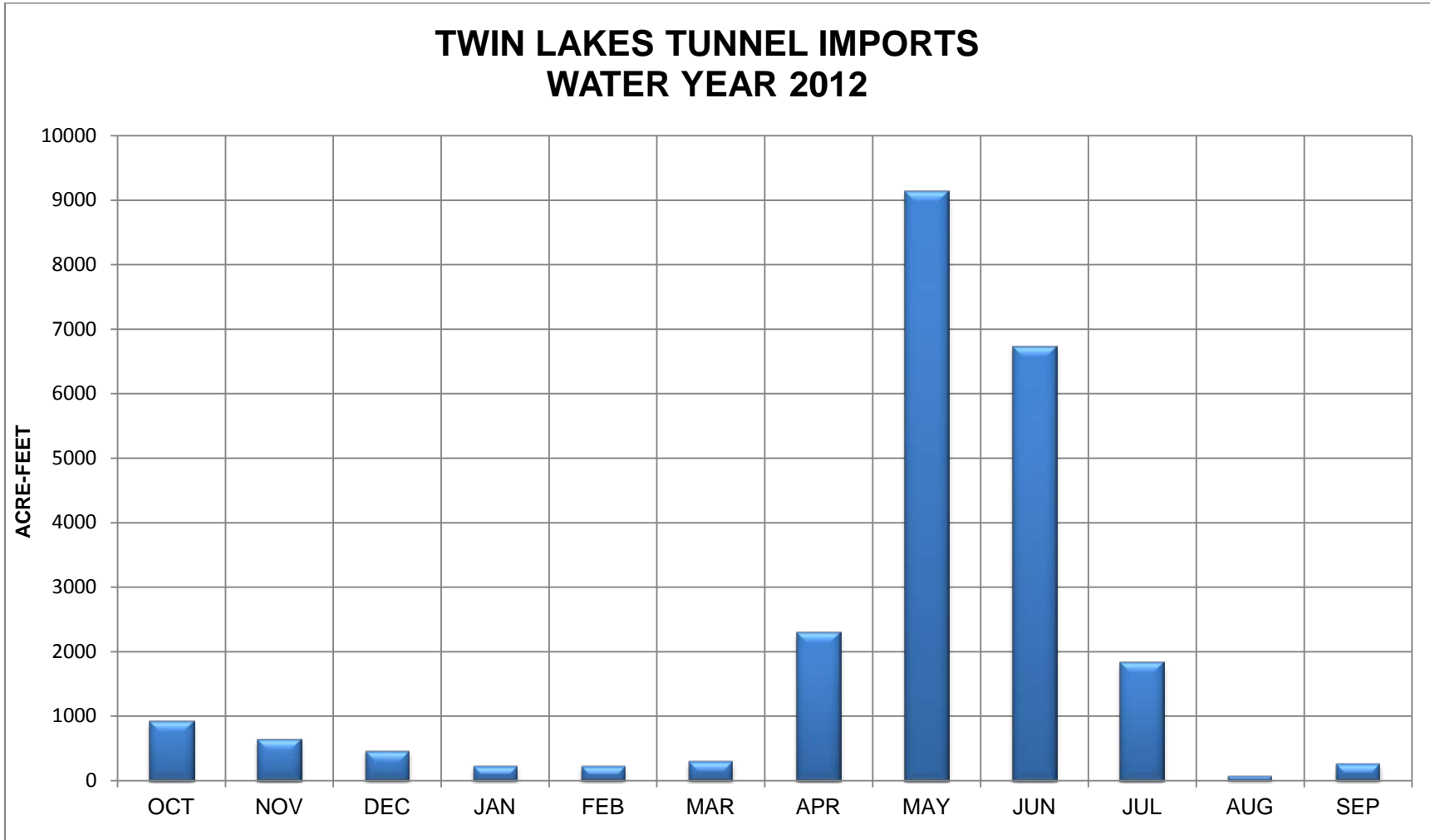
**LINCOLN CREEK BELOW GRIZZLY RESERVOIR
WATER YEAR 2012**



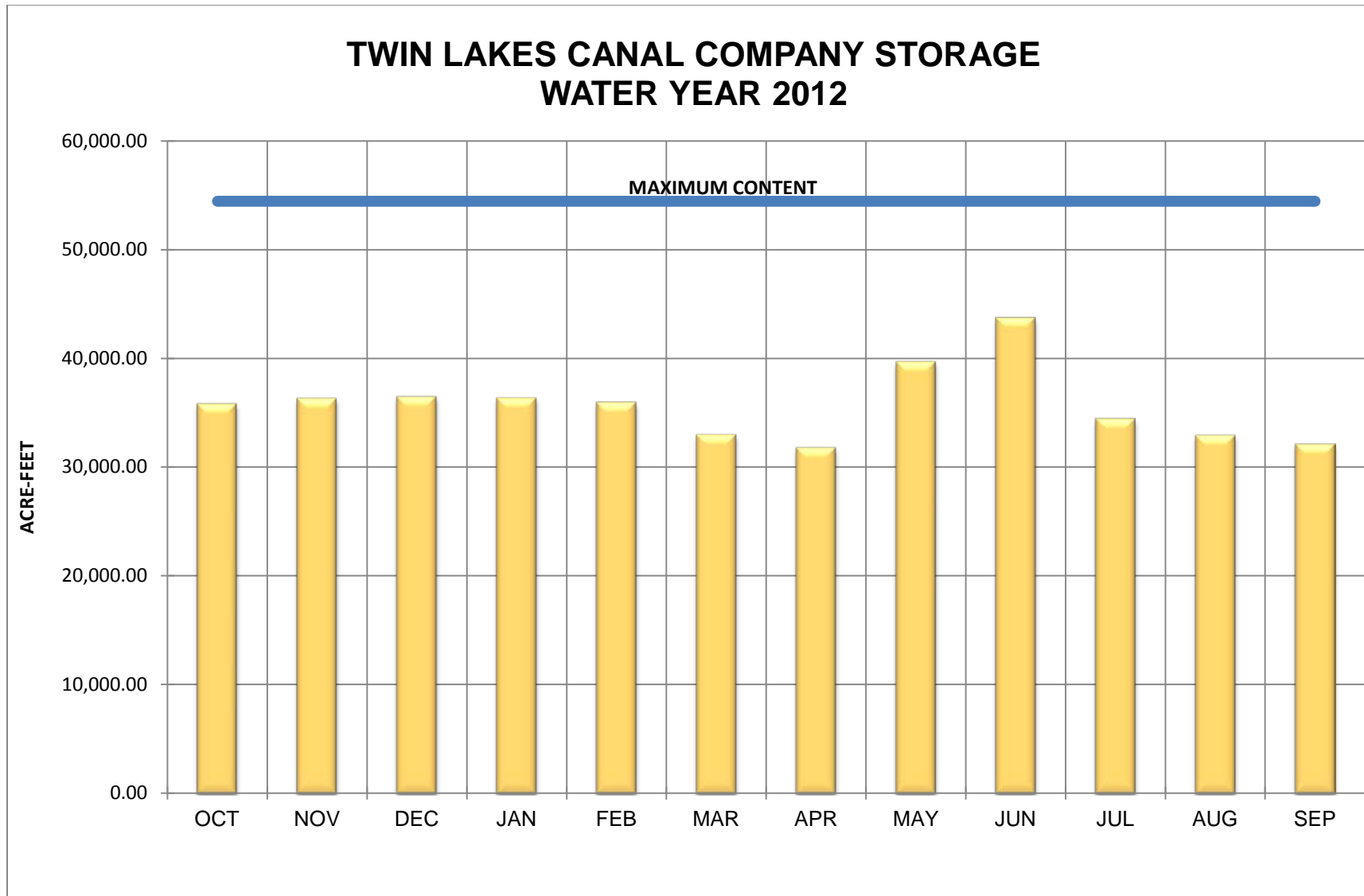
Roaring Fork Above Lost Man Creek



Twin Lake Tunnel Imports



Twin Lakes Canal Company Storage



APPENDIX D: DAILY DISCHARGE RECORDS, FRYINGPAN-
ARKANSAS PROJECT COLLECTION SYSTEM

Carter Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		4.18	0.86			
2		3.9	0.04			
3		6.05				
4		11.63				
5		15				
6		13.5				
7		8.06				
8		5.75				
9		7.28				
10		9.96				
11		10.05				
12		8.88				
13		7.85				
14		7.58				
15		11.88				
16		13.69				
17		11.23				
18		11.59				
19		11.22				
20		8.49				
21		8.97				
22		16.45				
23		19.64				
24	11.19	14.05				
25	11.44	10.62				
26	11.2	13.57				
27	12.44	14.32				
28	6.6	8.63				
29	4.89	10.68				
30	4.42	15.08				
31	---	8.2	---			
Total	62.18	327.98	0.90			
Average	8.88	10.58	0.45			
Max	12.44	19.64	0.86			
Min	4.42	3.90	0.04			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12) : 775.67 AF

Maximum instantaneous peak: 19.64 CFS

Note: All blank spaces, recorder was not operated; no water diverted

North Fork Fryingpan River Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		0.19	3.83			
2			4.32			
3			4.36			
4			1.66			
5		0.61	1.66			
6		1.07	1.66			
7		0.31				
8		0.01				
9						
10		0.07				
11		0.15				
12		0.17				
13		0.07				
14		0.03				
15		0.24				
16		4.45				
17		4.5				
18		4.69				
19		4.5				
20		4.14				
21		3.96				
22		4.32				
23		5.48				
24		6.13				
25		5.21				
26		5.06				
27		5.6				
28		4.69				
29		3.96				
30		3.92				
31	---	3.96	---			
Total		77.49	17.49			
Average		2.87	2.92			
Max		6.13	4.36			
Min		0.01	1.66			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 188.39 AF

Maximum instantaneous peak: 6.13 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Mormon Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		2.96				
2		2.73				
3		4.36				
4		10.84				
5		16.41				
6		17.43				
7		10.58				
8		6.12				
9		7.01				
10		11.57				
11		16.67				
12		12.42				
13		12.95				
14		11.43				
15		15.53				
16		23.22				
17		20.05				
18		26.81				
19	1.27	20.98				
20	1.07	14.93				
21		18.25				
22		29.48				
23	0.46	34.14				
24	4.06	26.41				
25	7.84	16.57				
26	9.02	22.11				
27	14.42	26.49				
28	6.03	14.64				
29	3.75	15.69				
30	2.77	19.56				
31	---	17.7				
Total	50.69	506.04				
Average	5.07	16.32				
Max	14.42	34.14				
Min	0.46	2.73				

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 1,104.27 AF

Maximum instantaneous peak: 34.14 CFS

Note: All blank spaces, recorder was not operated; no water diverted

North Cunningham Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		1.05	12.04			
2		1.05	14.38			
3		1.59	10.26			
4		5.82				
5		9.74				
6		9.44				
7		3.7				
8		1.87				
9		2.74				
10		6.6				
11		8.67				
12		5.21				
13		5.06				
14		4.3				
15		8.56				
16		14.69				
17		11.52				
18		16.79				
19		12.2				
20		7.05				
21		9.05				
22		17.5				
23		18.91				
24	2.29	14.55				
25	3.28	7.93				
26	3.47	13.14				
27	6.86	15.4				
28	1.86	7.18				
29	0.83	8.7				
30	0.46	10.95				
31	---	10.73				
Total	19.05	271.69	36.68			
Average	2.72	8.76	12.23			
Max	6.86	18.91	14.38			
Min	0.46	1.05	10.26			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 649.44 AF

Maximum instantaneous peak: 18.91 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Middle Cunningham Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		0.39				
2		0.7				
3		1.17				
4		4.87				
5		8.34				
6		8.94				
7		5.06				
8		2.65				
9		3.6				
10		6.17				
11		8.34				
12		5.72				
13		5.72				
14		4.2				
15		7.42				
16		13.83				
17		12.83				
18		16.37				
19		14.55				
20		9.92				
21		11.23				
22		18.66				
23		21.56				
24	0.06	19				
25	0.46	12.57				
26	0.97	16.64				
27	3.75	18.28				
28	0.57	10.78				
29	0.06	10.47				
30	0.02	11.6				
31	---	12.95				
Total	5.89	304.53				
Average	0.84	9.82				
Max	3.75	21.56				
Min	0.02	0.39				

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 615.72 AF

Maximum instantaneous peak: 18.91 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Ivanhoe Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1			8.29			
2		0.14	8.83			
3			7.31			
4		8.17	1.86			
5		12.38	1.68			
6		11.37	1.68			
7		5.36				
8		1.71				
9		3.62				
10		8.79				
11		8.76				
12		5.82				
13		5.16				
14		3.9				
15		5.93				
16		7.12				
17		15.87				
18		16.92				
19		14.23				
20		12.74				
21		12.56				
22		15.48				
23		16.52				
24	7.31	16.97				
25	9.88	16.12				
26	12.11	14.8				
27	16.57	13.38				
28	4.84	9.51				
29	3.59	8.25				
30	3.43	8.44				
31	---	7.94				
Total	57.73	287.96	29.65			
Average	8.25	9.93	4.94			
Max	16.57	16.97	8.83			
Min	3.43	0.14	1.86			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 744.49 AF

Maximum instantaneous peak: 16.97 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Lily Pad Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		3.9	6.61			
2		6	6.91			
3		5.89	6.31			
4		7.35	6.42			
5		8.83	3.19			
6		9.8	3.3			
7		9.36				
8		6.58				
9		7.33				
10		8.75				
11		10.81				
12		8.98				
13		8.35				
14		7.96				
15		10.76				
16		12.08				
17		11.17				
18	0.31	11.97				
19	0.38	9.7				
20	0.31	8.85				
21	0.38	9.05				
22	0.97	10.81				
23	1.07	10.81				
24	3	8.88				
25	6.22	8.93				
26	2.87	9.65				
27	4.33	8.6				
28	3.3	6.38				
29	2.87	6.54				
30	3.05	6.58				
31	---	6.4	---			
Total	29.06	267.05	32.74			
Average	2.24	8.61	5.46			
Max	6.22	12.08	6.91			
Min	0.31	3.90	3.3			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 652.27 AF

Maximum instantaneous peak: 12.08 cubic feet per second

Note: All blank spaces, recorder was not operated; no water diverted

Granite Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		1.28	12.38			
2		4.62	13.46			
3		4.18	11.23			
4		6.92	11.19			
5		9.01	11.4			
6		11.75	10.71			
7		7.59				
8		5.62				
9		6.73				
10		9.24				
11		9.89				
12		7.75				
13		7.75				
14		7.17				
15		10.35				
16		12.47				
17		10.6				
18		11.58				
19		10.51				
20		8.94				
21		13.04				
22		14.28				
23		17.02				
24	0.75	12.71				
25	0.82	10.24				
26	1.69	12.95				
27	3.32	13.07				
28	1.39	8.86				
29	0.82	9.91				
30	0.89	11.4				
31	---	11.49				
Total	9.68	298.92	70.37			
Average	1.38	9.64	11.73			
Max	3.32	17.02	13.46			
Min	0.75	1.28	10.71			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 768.05 AF

Maximum instantaneous peak: 17.02 cubic feet per second

Note: All blank spaces, recorder was not operated; no water diverted

No Name Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1			3.87			
2			4.43			
3			2.32			
4		9.98	1.98			
5		12.19	1.35			
6		14.22	1.3			
7		4.49				
8						
9		0.01				
10						
11						
12		3.92				
13		0.01				
14						
15		7.87				
16		9.47				
17		5.94				
18		7.5				
19		5.29				
20		3.61				
21		4				
22		8.62				
23		10.39				
24		6.72				
25	3.97	8.07				
26		7.7				
27	11.76	7.01				
28	1.11	1.87				
29		2.34				
30		3.18				
31	---	3.28				
Total	16.84	147.68	15.25			
Average	5.61	6.15	2.54			
Max	11.76	14.22	4.43			
Min	1.11	0.01	1.30			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 356.58 AF

Maximum instantaneous peak: 65.66 cubic feet per second

Note: All blank spaces, recorder was not operated; no water diverted

Midway Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		1.1	33.93			
2		0.98	36.57			
3		0.98	27.1			
4		7.97	27.47			
5		0.1	26.26			
6		10.17	25.79			
7		4.82				
8		3.94				
9		8.07				
10		17.34				
11		17.75				
12		13.23				
13		0.83				
14		10.46				
15		21.5				
16		29.2				
17		24.65				
18		27.85				
19		21.65				
20		15.06				
21		22.49				
22		40.4				
23	2.43	48.24				
24	4.57	29.81				
25	9.26	22.14				
26	1.26	35.68				
27	1.35	35.15				
28	5.08	19.59				
29	0.75	22.44				
30	0.69	25.79				
31	---	27.74	---			
Total	25.39	567.12	177.12			
Average	3.17	18.29	29.52			
Max	9.26	48.24	36.57			
Min	0.69	0.1	25.79			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 1,526.56 AF

Maximum instantaneous peak: 48.24 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Hunter Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U. S. G. S.

Day	April	May	June	July	August	September
1			27.97			
2			32.79			
3			13.94			
4			19.88			
5			15.89			
6		25.48	14.61			
7		1.32				
8						
9						
10						
11						
12						
13						
14						
15						
16		21.27				
17		11.76				
18		13.56				
19		3.69				
20						
21		12.04				
22		34.12				
23		41.16				
24		15.46				
25	7.48	3.33				
26		19.93				
27	23.05	20.89				
28	2.3	0.93				
29		7.61				
30		15.81				
31	---	17.05	---			---
Total	32.83	265.41	125.08			
Average	10.94	15.61	17.84			
Max	23.05	41.16	32.79			
Min	2.3	0.93	5.62			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 839.66 AF

Maximum instantaneous peak: 41.16 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Sawyer Creek Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		9.19	25.02			
2		9.49	27.78			
3		9.49	24.59			
4		11.79	25.15			
5		13.77	26.12			
6		14.72	25.45			
7		13.88				
8		12.63				
9		12.97				
10		14.39				
11		15.27				
12		15.01				
13		15.56				
14		14.85				
15		16.84				
16		19.79				
17		18.72				
18		19.71				
19		18.99				
20		18.15				
21		20.08				
22		24.25				
23	6.41	28.95				
24	7.35	27.55				
25	8.45	22.04				
26	9.39	23.83				
27	12.32	25.58				
28	9.5	20.68				
29	8.92	20.35				
30	8.75	21.71				
31	---	22.76				
Total	71.09	552.99	154.11			
Average	8.89	17.84	25.69			
Max	12.32	28.95	27.78			
Min	6.41	9.19	25.02			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 1,543.54 AF

Maximum instantaneous peak: 28.95 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Chapman Gulch Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		1.48	112.66			
2		5.52	127.95			
3		4.12	77.57			
4		49.46	83.16			
5		49.28	77.68			
6		98.48	72.03			
7		41.89				
8		14.51				
9		23.1				
10		35.86				
11		35.94				
12		30.08				
13		9.25				
14		21.25				
15		64.55				
16		104.86				
17		76.02				
18		89.4				
19		52.45				
20		35.46				
21		72.03				
22		141.05				
23	2.46	173				
24	12.09	93.9				
25	35.14	82.09				
26	16.15	103.94				
27	69	107.52				
28	26.15	38.96				
29	10.34	58.78				
30	10.93	76.34				
31	---	86.37				
Total	182.26	1876.94	551.05			
Average	22.78	60.55	91.84			
Max	35.14	173.00	127.95			
Min	2.46	1.48	72.03			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 4,227.30 AF

Maximum instantaneous peak: 173.00 CFS

Note: All blank spaces, recorder was not operated; no water diverted

South Fork Fryingpan River Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		0.41	29.8			
2		4.47	29.17			
3		3.77	13.96			
4		19.94	35			
5		31.28	24.11			
6		39.69	17.53			
7		12.83				
8		0.41				
9		6.2				
10		21.36				
11		24.29				
12		10.9				
13		12.16				
14		6.42				
15		21.47				
16		28.4				
17		21.99				
18		24.35				
19		16.15				
20		10.58				
21		22.11				
22		33.66				
23	0.41	29.55				
24	11.78	22.4				
25	16.78	19.61				
26	22.39	23.22				
27	34.19	25.92				
28	12.98	1.67				
29	11.45	5.13				
30	13.41	17.16				
31	---	21.13				
Total	123.39	538.63	149.57			
Average	15.42	17.38	24.93			
Max	34.19	39.69	29.8			
Min	0.41	0.41	17.53			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 1,609.79 AF

Maximum instantaneous peak: 39.69 CFS

Note: All blank spaces, recorder was not operated; no water diverted

Fryingpan River Feeder Conduit near Norrie, CO

Water Year 2012

Unit: Cubic Feet Per Second

Source: U.S. Bureau of Reclamation

Day	April	May	June	July	August	September
1		0.78	32.39			
2		1.72	41.4			
3		0.99	24.46			
4		14.83	41.21			
5		28.65	45.31			
6		44.56	37.33			
7		13.8				
8		0.78				
9		3.7				
10		15.82				
11		24.07				
12		13.8				
13		10.8				
14		7.07				
15		20.27				
16		35.92				
17		28.33				
18		31.63				
19		24.77				
20		16.02				
21		17.45				
22		40.48				
23	0.78	49.74				
24	15.82	29.88				
25	22.93	21.89				
26	30.38	29.88				
27	48.28	31.38				
28	24.92	16.83				
29	20.65	20.13				
30	10.28	20.71				
31	---	20.34				
Total	174.04	637.02	222.10			
Average	21.76	20.55	37.02			
Max	48.28	49.74	45.31			
Min	0.78	0.78	32.39			

Water Year 2012 Total (from 23 Apr 12 to 9 Jun 12): 2,049.24 AF

Maximum instantaneous peak: 49.74 CFS

Note: All blank spaces, recorder was not operated; no water diverted

OPERATING PRINCIPLES

FRYINGPAN-ARKANSAS PROJECT

ADOPTED BY THE STATE OF COLORADO

APRIL 30, 1959

(As amended December 30, 1959,
and December 9, 1960)

MARCH 15, 1961----Ordered to be printed

U. S. GOVERNMENT PRINTING OFFICE

WASHINGTON: 1961

H. RES. 91

In the House of Representatives, U. S.,

March 15, 1961.

Resolved, That there be printed as a House document the publication entitled “Operating Principles, Fryingpan-Arkansas Project, Adopted by the State of Colorado, April 30, 1959 (as amended December 30, 1959, and December 9, 1960)”, and that there be printed for the use of the Committee on Interior and Insular Affairs one thousand additional copies.

Attest:

Ralph R. Roberts, Clerk.

OPERATING PRINCIPLES, FRYINGPAN-ARKANSAS PROJECT

ADOPTED BY THE STATE OF COLORADO, APRIL 30, 1959

(As Amended December 30, 1959, and December 9, 1960)

The construction and operation of the project involve the diversion of water from the headwaters of the Fryingpan River and other tributaries of the Roaring Fork River to the Arkansas River Basin. The project contemplates—

- (a) The maximum conservation and use of water;
- (b) The protection of western Colorado water uses, both existing and potential, in accordance with the declared policy of the State of Colorado; and
- (c) The preservation of recreational values.

In order to accomplish such purposes, the project shall be operated by the United States in compliance with the Federal reclamation laws, the laws of the State of Colorado relating to the appropriation, use, or distribution of water, and the following operating principles:

1. As used herein:
 - (a) “Project” means that certain enterprise planned and designed by the Bureau of Reclamation, Department of the Interior, for the transmountain diversion of water from the headwaters of the Fryingpan River and other tributaries of the Roaring Fork River to the basin of the Arkansas River, together with all of its appurtenant works and facilities in both eastern and western Colorado.
 - (b) “Eastern Colorado” means that portion of the State of Colorado lying within the natural drainage basin of the Arkansas River.
 - (c) “Western Colorado” means that portion of the State of Colorado lying within the natural drainage basin of the Colorado River and served by diversions made from the Colorado River, or its tributaries, above its confluence with the Gunnison River.
 - (d) “Southeastern Colorado Water Conservancy District” means that entity created to contract for payment to the United States of an appropriate portion of project cost allocated to certain water uses in eastern Colorado.
 - (e) “Colorado River Water Conservation District” means that entity created by Colorado Revised Statutes 1953, 149-8, as amended.
 - (f) “Southwestern Water Conservation District” means that entity created by Colorado Revised Statutes 1953, 149-9, as amended.
 - (g) “Ruedi Reservoir” means the reservoir presently planned for construction on the Fryingpan River above the town of Basalt as part of the project.
 - (h) “Ashcroft Reservoir” means not only the reservoir contemplated for construction on Castle Creek, a tributary of the Roaring Fork River, but also, unless the context requires otherwise, any other reservoir that may be constructed in the Roaring Fork basin above the town of Aspen in lieu of that reservoir.

(i) “cfs” means cubic feet of water per second of time.

2. The Ruedi Reservoir shall be constructed and maintained on the Fryingpan River above the town of Basalt with an active capacity of not less than 100,000 acre-feet. In addition thereto and in order to offset adverse streamflow conditions on the Roaring Fork River above the town of Aspen which might occur as a result of the project enlargement of the Twin Lakes Reservoir, the Ashcroft Reservoir on Castle Creek, or some reservoir in lieu thereof, shall be constructed on the Roaring Fork drainage above Aspen to a capacity of approximately 5,000 acre-feet: Providing, However, That the Ashcroft Reservoir shall be constructed only if the Secretary of the Interior after appropriate study shall determine that its benefits exceed the costs: And providing further, That no part of the construction, operation, or maintenance of said Ashcroft Reservoir shall be chargeable to the Fryingpan-Arkansas project.

All of such stored water shall be released under the conditions and limitations hereinafter set forth.

3. The receipts from the sale of water from Ruedi Reservoir, as permitted in paragraph 6(b) hereof, shall be applied solely to the operation and maintenance costs and to those reimbursable construction costs of said reservoir which exceed \$7,600,000. The cost of perpetual operation and maintenance of the Ruedi Reservoir shall be borne by users of project water and users of water stored in Ruedi Reservoir in such proportion as may be determined by the Secretary of the Interior.
4. The inclusion of the Ruedi Reservoir in the project shall not preclude the construction of any other replacement or regulatory reservoirs on the Colorado River or its tributaries above Cameo gaging station.
5. The Ruedi Reservoir shall be completed and in operation before any water is diverted to eastern Colorado by means of the project.
6. (a) The replacement capacity of Ruedi Reservoir, and any reservoir constructed in addition thereto, is that portion of the total reservoir capacity required to permit project diversions at times when such diversions could not otherwise be made because of simultaneous demands of senior diversions in western Colorado existing at the time of the adoption of these operating principles, and shall be so operated to accomplish this purpose. Water stored in such capacity shall be released by the United States, upon the request of the Colorado State engineer, to the extent that water would have been available to said decreed rights except for stream depletion resulting from diversions by this project to the Arkansas Valley.
- (b) The regulatory capacity of Ruedi Reservoir, and any reservoir constructed in addition thereto, is that portion of the total reservoir capacity not needed for replacement purposes. Water stored in such category may be sold or leased by the United States to water users in Colorado for any purpose recognized by the laws of the United States: Provided, that the sale of water for use outside the natural basin of the Colorado River can only be made with the consent of the Colorado River Water Conservation District. Charges for the use of such water shall be established by the Secretary of the Interior by appropriate contract in accordance with the payment ability of such water users.

7. The primary purpose of Ruedi Reservoir, and any reservoir constructed in addition thereto, is to furnish, to the extent of its capacity, in like manner as if the project were constructed by a water conservancy district organized pursuant to the laws of the State of Colorado, the water required for the protection of western Colorado water users by the provisions of Colorado Revised Statutes 1953, 149-6-13, reading as follows:

However, any works or facilities planned and designed for the exportation of water from the natural basin of the Colorado River and its tributaries in Colorado, by any district created under this article, shall be subject to the provisions of the Colorado River Compact and the Boulder Canyon Project Act. Any such works or facilities shall be designed, constructed and operated in such a manner that the present appropriations of water, and in addition thereto prospective uses of water for irrigation and other beneficial consumptive use purposes, including consumptive uses for domestic, mining, and industrial purposes, within the natural basin of the Colorado River in the State of Colorado, from which water is exported, will not be impaired nor increased in cost at the expense of the water users within the natural basin. The facilities and other means for the accomplishment of said purpose shall be incorporated in, and made a part of any project plans for the exportation of water from said natural basin in Colorado.

8. Project diversions from Lime Creek shall be made only in the months of May and June of each year, unless the Colorado River Water Conservation District shall, by written communication, advise the Colorado State engineer that additional diversions can be made.
9. The respective decrees which may be or have been awarded to the parties hereto as a part of the Fryingpan-Arkansas project and Basalt project shall be administered by the proper officials of the State of Colorado, in accordance with the applicable laws of the State of Colorado, and with the following principles and procedures, to wit:
 - (1) That the demand on the waters available under such decrees shall be allocated in the following sequence:
 - (a) For diversion to the Arkansas Valley through the collection system and the facilities of the Fryingpan-Arkansas project in an amount not exceeding an aggregate of 120,000 acre-feet of water in any year, but not to exceed a total aggregate of 2,352,800 acre-feet in any period of 34 consecutive years reckoned in continuing progressive series starting with the first full year of diversions, both limitations herein being exclusive of Roaring Fork exchanges as provided in (c) below, and exclusive of diversions for the Busk-Ivanhoe decree; and with the further and absolute limitation that in order to protect existing and future beneficial uses of water in Western Colorado, including recreational and fishing values, the State engineer shall so regulate the transmountain diversions above referred to, to the end that no diversions shall be made which will reduce the remaining

aggregate streamflows to less than either of the following minimum standards:

- (i) The Fryingpan collection system at the points of diversion collectively, exclusive of Lime Creek: 15 cfs October 1 through March 31; 30 cfs April 1 through September 30.
- (ii) Near Norrie (immediately below the junction of North Fork and Fryingpan River): 30 cfs October 1 through March 31; 100 cfs April 1 through April 30; 150 cfs May 1 through May 31; 200 cfs June 1 through June 30; 100 cfs July 1 through July 31; 75 cfs August 1 through August 31; 65 cfs September 1 through September 30.

In maintaining the above minimum standards, the project diversions shall be regulated, so far as is practicable, in such a manner that the North Fork of the Fryingpan River, the Fryingpan River, and each of the tributaries of those streams, shall contribute to the residual streamflows required by those minimum standards quantities of water in proportion to their natural contributions.

- (b) For storage in Ruedi Reservoir to the extent of its actual capacity, which is to be not less than 100,000 acre-feet.
 - (c) For 3,000 acre-feet annually, to the extent that it is available in excess of (a) and (b) above, or such part thereof as may be required, to be delivered to the Twin Lakes Reservoir and Canal Company in exchange for equivalent releases from the headwaters of the Roaring Fork River which would otherwise be diverted through such Twin Lakes Reservoir and Canal Company collection and diversion system.
 - (d) For any other beneficial use in western Colorado in accordance with court decree, but not herein contemplated.
- (2) The effectuation of the above principles requires concurrent Fryingpan-Arkansas project diversion and Ruedi Reservoir storage to be accomplished in the manner following: The State engineer annually shall collect pertinent data, including information pertaining to snowpack and all other available evidence, and shall thereafter so divide and apportion the surface runoff as to achieve, as nearly as possible, the foregoing division of water and the maximum of concurrent diversions and storage. The diversions herein contemplated shall be on the basis of a water year hereby defined as that interim of October 1 through the following September 30.
10. For the protection of recreational values, including fishing, on the Fryingpan River below Ruedi Reservoir, releases of water from said reservoir, not to exceed the stream inflow, shall be made so that the streamflow immediately below the junction of the Fryingpan River and Rocky Fork shall not be reduced below 39 cfs from November 1 to April 30, and 110 cfs from May 1 to October 30, or as actual experience or court decree hereafter dictate.
11. An appropriate written contract may be made whereby Twin Lakes Reservoir and Canal Company shall refrain from diverting water whenever the natural flow of the Roaring

Fork River and its tributaries shall be only sufficient to maintain a flow equal to or less than that required to maintain the recommended average flows in the Roaring Fork River immediately above its confluence with Difficult Creek in a quantity proportionate to the respective natural flow of the Roaring Fork River. The recommended average flows above mentioned are flows in quantities equal to those recommended as a minimum immediately above its confluence with Difficult Creek according to the following schedule submitted by the United States Fish and Wildlife Service and the Colorado Game and Fish Commission:

Month	Average Second-feet	Acre-feet (thousands)	Month	Average Second-feet	Acre-feet (thousands)
October	44	2.7	May	100	6.2
November	35	2.1	June	120	7.1
December	29	1.8	July	100	6.2
January	26	1.6	August	63	3.9
February	25	1.4	September	44	<u>2.6</u>
March	24	1.5			
April	64	3.8	Total	----	40.9

In maintaining the above averages, at no time shall the flow be reduced below 15 cfs during the months of August to April, inclusive, or below 60 cfs during the months of May to July, inclusive, providing the natural flow during said period is not less than these amounts. The obligation to supply the minimum streamflow as set forth in the above table on the Roaring Fork River shall, to the extent of 3,000 acre-feet annually, be a project obligation to be supplied from any waters diverted from the south tributaries of Hunter Creek, Lime Creek, Last Chance Creek, or any of them.

The Twin Lakes Reservoir and Canal Company shall not be required to refrain from diverting water under its existing decrees from the Roaring Fork River except to the extent that a like quantity of replacement water is furnished to said company without charge therefore through and by means of project diversions and storage.

If by reason of storage capacity in the Ruedi Reservoir, or any reservoir constructed in addition thereto, the Twin Lakes Reservoir and Canal Company derives additional water or other benefits or advantages it would not have realized had this project not been constructed, then nothing herein contained shall prevent the project from making appropriate charges for such water or other benefits or advantages. All revenues derived from the use of water stored in Ashcroft Reservoir shall be used to assist in the repayment of the construction, operation, and maintenance costs of that reservoir, or any reservoir constructed in lieu thereof, as may be determined by the Secretary of the Interior.

12. All lands acquired and held for project construction and operation and water surfaces of project reservoirs will be open to the public for recreational purposes, excepting those areas reserved by the operating agency.
13. The project will be operated in such a manner that those in eastern Colorado using project water imported from the Colorado River Basin for domestic purposes shall have preference over those claiming or using water for any other purpose.
14. The project is to be operated in such a manner as to secure the greatest benefit from the use and reuse of imported project waters within project boundaries in the State of Colorado
15. Any and all benefits and rights of western Colorado water users in and to water stored in Green Mountain Reservoir, as described and defined in Senate Document 80, 75th Congress, 1st session, shall not be impaired or diminished by this project.
16. The project, its operation, maintenance, and use shall be subject to the provisions of the Upper Colorado River Basin Compact of October 11, 1948 (Public Law 37, 81st Congress, 1st session), and the Colorado River Compact of November 24, 1922 (House Document 605, 67th Congress, 4th session).
17. The Colorado River Water Conservation District of the State of Colorado shall acquire title to storage of water in Ruedi Reservoir and any reservoir constructed in addition thereto, by appropriate proceedings in the courts of the State of Colorado. The Southeastern Colorado Water Conservancy District of the State of Colorado shall likewise acquire title to the water required by the project for diversion to the Arkansas Valley. The Secretary of the Interior shall at any time after the authorization of the project have the option to obtain or require the transfer to the United States of any and all rights initiated or acquired by appropriation as herein set forth: Provided, however, That the rights so taken shall be subject to a beneficial use of such water as may be provided in the repayment contract or contracts, and subject to all the operating principles herein set forth.
18. No transmountain diversion of water shall ever be made through the collection and diversion system of the Fryingpan-Arkansas Project in excess of the quantitative limitations and conditions established by this document: Provided, however, That when under the laws of the State of Colorado, there may be additional water available for such collection and diversion which is not at the time of diversion required for beneficial use in western Colorado or for filling interstate water compact agreements, then such water may be collected and diverted for beneficial use in the Arkansas

Valley: Provided further, That such additional diversion shall only be made with the mutual consent of each of the following agencies of the State of Colorado, to wit: the Colorado Water Conservation Board, the Southwestern Water Conservation District, the Colorado River Water Conservation District, and the Southeastern Colorado Water Conservancy District.

19. To assure project operation in conformity with the operating principle heretofore stated, to provide a means for the collection and interchange of information, and to provide a method for the continued study of project operations to the end that, if the stated operating principles may be improved upon, recommendations for changes may be made to the contracting parties, a commission shall be created in an appropriate manner to be composed of one representative of the Southeastern Colorado Water Conservancy District, one representative of the Colorado River Water Conservation District, two representatives of the United States, and one representative of the State of Colorado appointed by the Colorado Water Conservation Board after consultation with the Colorado Game and Fish Commission. The powers of such commission shall be limited to the collection of data, the making of findings of fact, and the suggestion of changes in operating principles.

These operating principles shall be deemed to have amended and take the place of those operating principles signed and executed on April 30, 1959. These operating principles shall be and do constitute a contract between the signatory parties, and shall inure to the benefit of and shall be and remain binding upon said parties, their respective successors and assigns.

Executed as amended at Denver, Colorado, this 9th day of December 1960.

COLORADO WATER CONSERVATION BOARD

Steve McNichols, Chairman;

Governor, State of Colorado

Attest:

Felix L. Sparks,

Director and Secretary

SOUTHEASTERN COLORADO WATER CONSERVANCY

DISTRICT

By J. Selby Young, President

Attest:

J. G. Shoun,

Secretary

COLORADO RIVER WATER CONSERVATION DISTRICT

By A. Allen Brown, President

Attest:

Philip P. Smith,

Secretary

SOUTHWESTERN WATER CONSERVATION DISTRICT

By Ira E. Kelly, President

Attest:

Archie B. Toner,

Secretary